

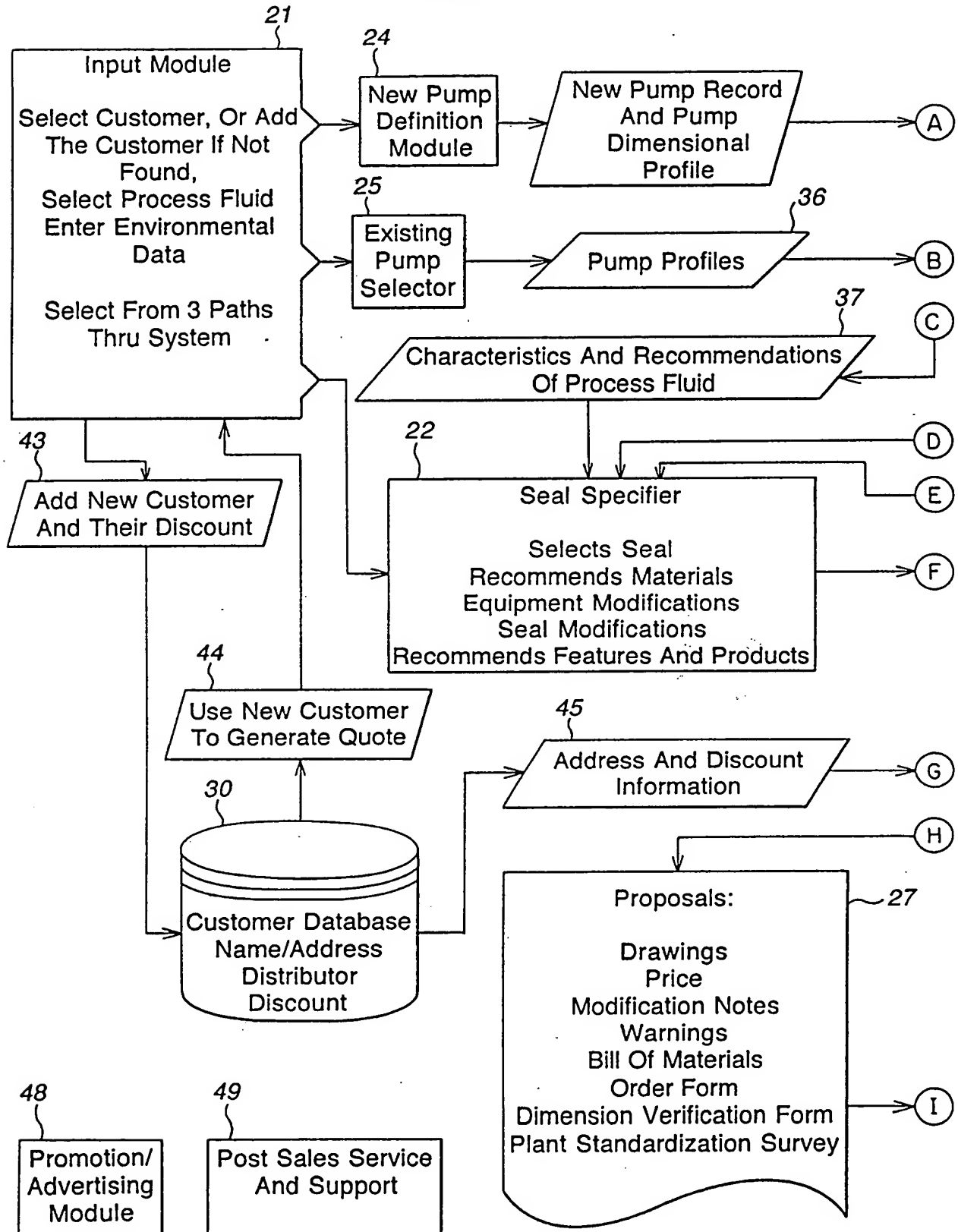
FIG. 1 is a cross-sectional view of a mechanical assembly. The assembly includes a central cylindrical component (34) with internal features labeled 8, 1, 2, 9, 11, 3, 7, 16, and 13. A horizontal shaft (18) passes through the top of the cylinder. A vertical shaft (19) is positioned above the cylinder. A horizontal shaft (14) passes through the bottom of the cylinder. A vertical shaft (17) is positioned below the cylinder. A horizontal shaft (15) is positioned to the right of the cylinder. Dimensions are indicated by arrows and labeled XXX.

FIG. 1B

FIG. 1B

APPARATUS AND METHOD FOR SELECTING  
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FIG. 2A

Fig. 2A	Fig. 2B	Fig. 2C
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Fig. 2



**FIG. 2B**

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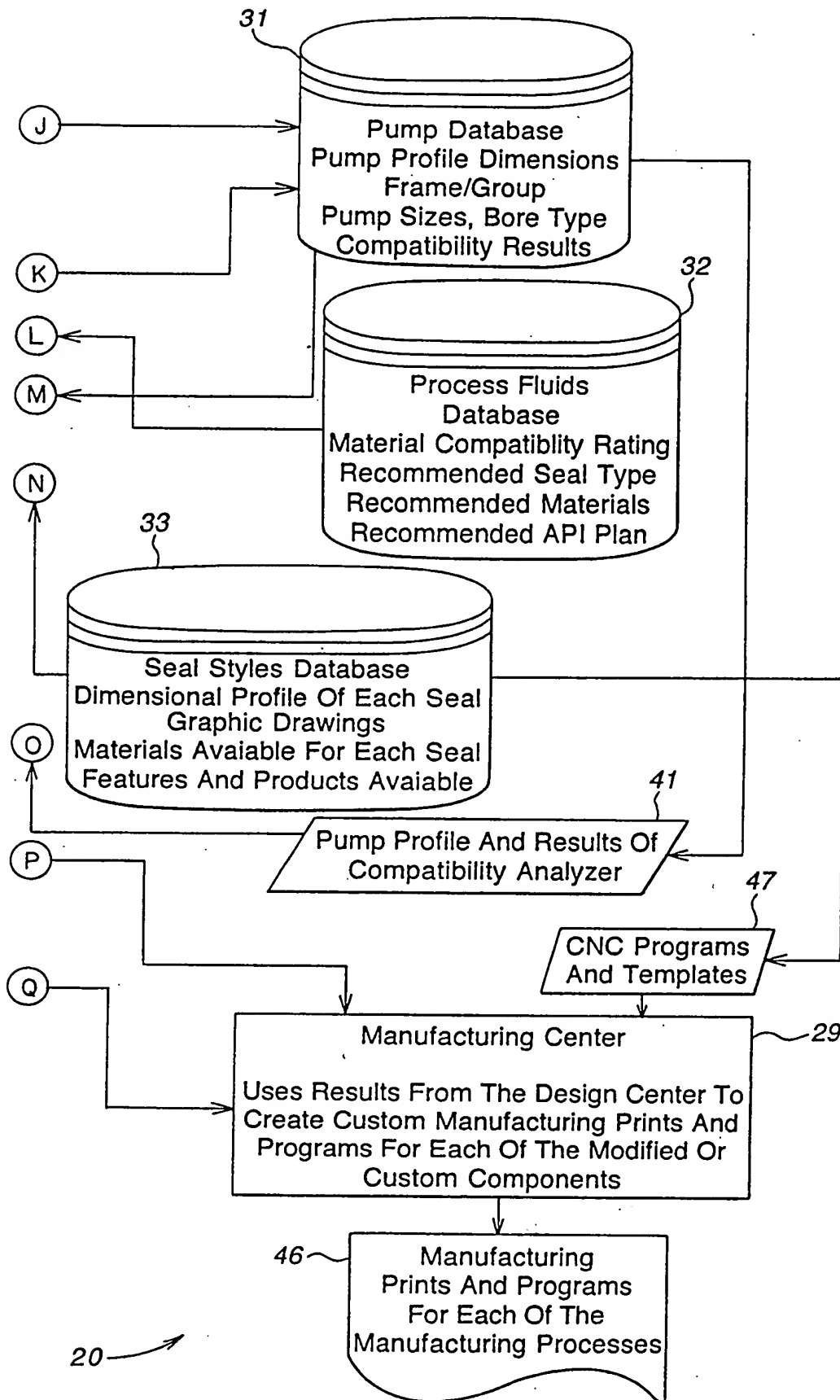


FIG. 2C

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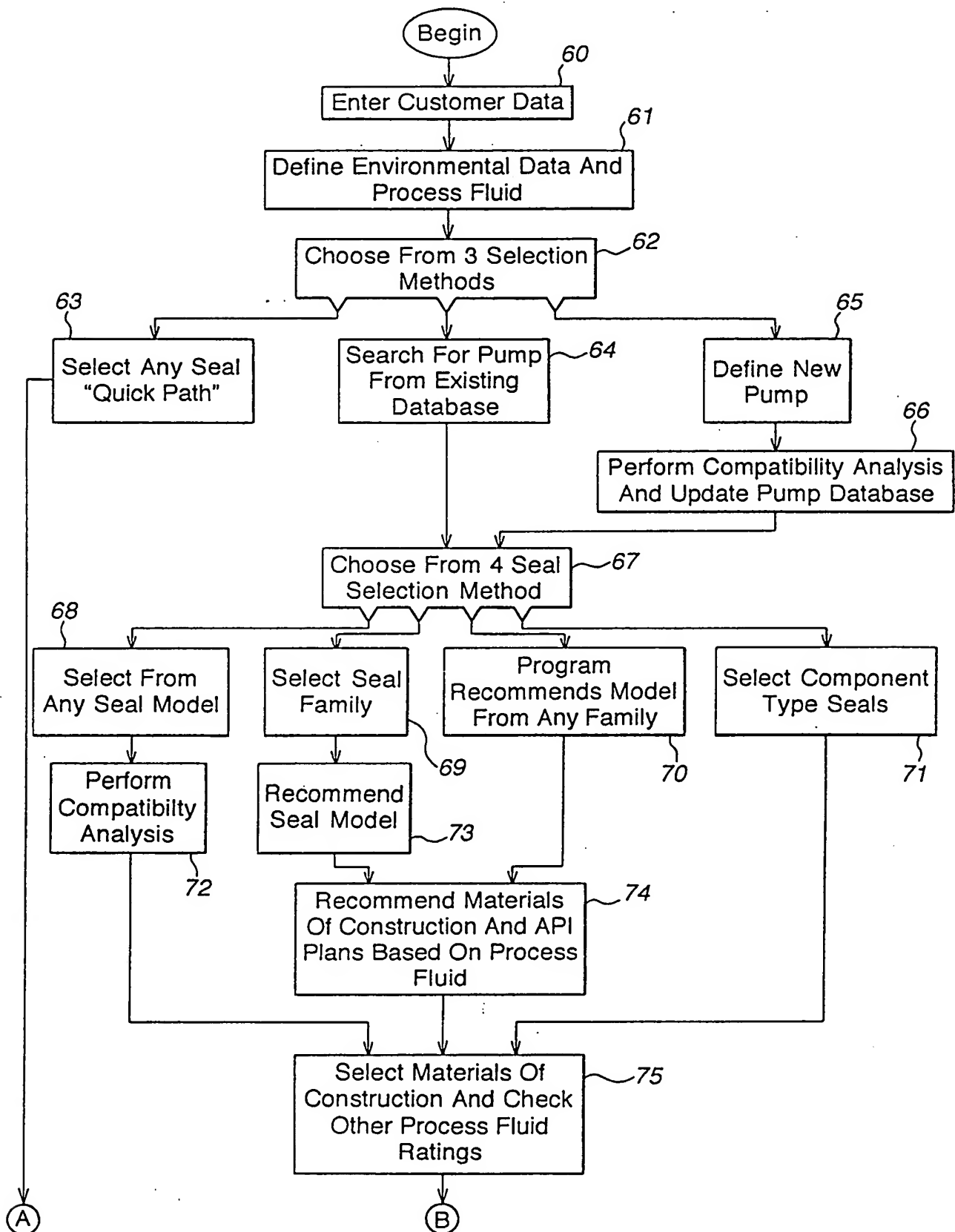


FIG. 3A

APPARATUS AND METHOD FOR SELECTING  
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Northeast Equipment, Inc.

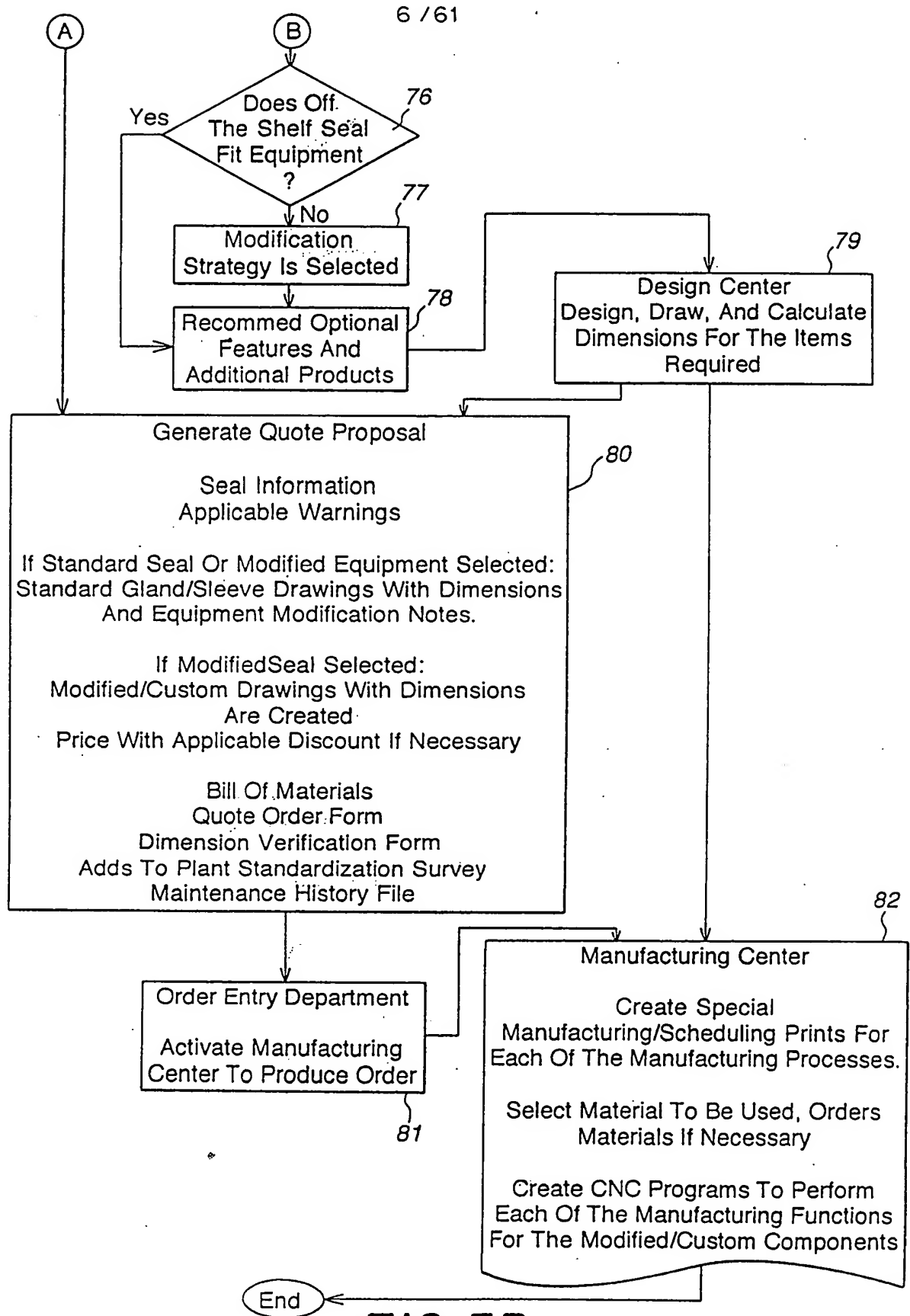


FIG. 3B

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FIG. 4

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Northeast Equipment, Inc.

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<div></div> <p><u>Please Enter Customer Data Below</u></p>															
<p><u>Billing and Mailing Information:</u> <span style="float: right;">110 ~</span></p> <table><tr><td>Code</td><td></td></tr><tr><td>Company</td><td>Contact</td></tr><tr><td>Address 1</td><td>Phone</td></tr><tr><td>Address 2</td><td>Fax</td></tr><tr><td>City, State</td><td>E-mail</td></tr><tr><td>Zip Code</td><td>Discount ~ 112</td></tr><tr><td>Country</td><td>Ship Via:</td></tr></table>		Code		Company	Contact	Address 1	Phone	Address 2	Fax	City, State	E-mail	Zip Code	Discount ~ 112	Country	Ship Via:
Code															
Company	Contact														
Address 1	Phone														
Address 2	Fax														
City, State	E-mail														
Zip Code	Discount ~ 112														
Country	Ship Via:														
<p><u>Ship To Information:</u> <span style="float: right;">111 ~</span></p> <p>Complete only if different than mailing address.</p> <table><tr><td>Company</td><td></td></tr><tr><td>Address 1</td><td></td></tr><tr><td>Address 2</td><td></td></tr><tr><td>City, State</td><td></td></tr><tr><td>Zip Code</td><td></td></tr><tr><td>Country</td><td></td></tr></table> <p style="text-align: right;">4.0</p>		Company		Address 1		Address 2		City, State		Zip Code		Country			
Company															
Address 1															
Address 2															
City, State															
Zip Code															
Country															

**FIG. 5**



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Construct the part number of the Delta seal you are currently using  
by clicking on each of the yellow fields and selecting the corresponding letter.

Metal

Elastomer

Seal Model

Seal Size

Inboard Face

Outboard Face

A

V

3200

1.375

G

G

Select any optional features currently included in your seal,  
or select any features you would like to include in your new seal.

120

Available Optional Features

Selected

Part Number

Discription

Yes

No

XXXXXXXXXX

XXXXXXXXXXXXXX

Yes

No

XXXXXXXXXXXXXX

XXXXXXXXXXXXXX

Available Additional Products

122

Yes

No

XXXXXXXXXX

XXXXXXXXXXXXXX

XXXX

Yes

No

XXXXXXXXXXXXXX

XXXXXXXXXXXXXX

XXX

123

Yes

No

XXXXXXXXXXXXXX

Yes

No

XXXXXXXXXXXXXX

Yes

No

XXXXXXXXXXXXXX

Yes

No

XXXXXXXXXXXXXX

Yes

No

XXXXXXXXXXXXXX

Yes

No

XXXXXXXXXXXXXX

Yes

No

XXXXXXXXXXXXXX

Yes

No

XXXXXXXXXXXXXX

Yes

No

XXXXXXXXXXXXXX

Yes

No

XXXXXXXXXXXXXX

Yes

No

XXXXXXXXXXXXXX

Yes

No

XXXXXXXXXXXXXX

Yes

No

XXXXXXXXXXXXXX

Continue

Go To Quote

10.0

FIG. 6

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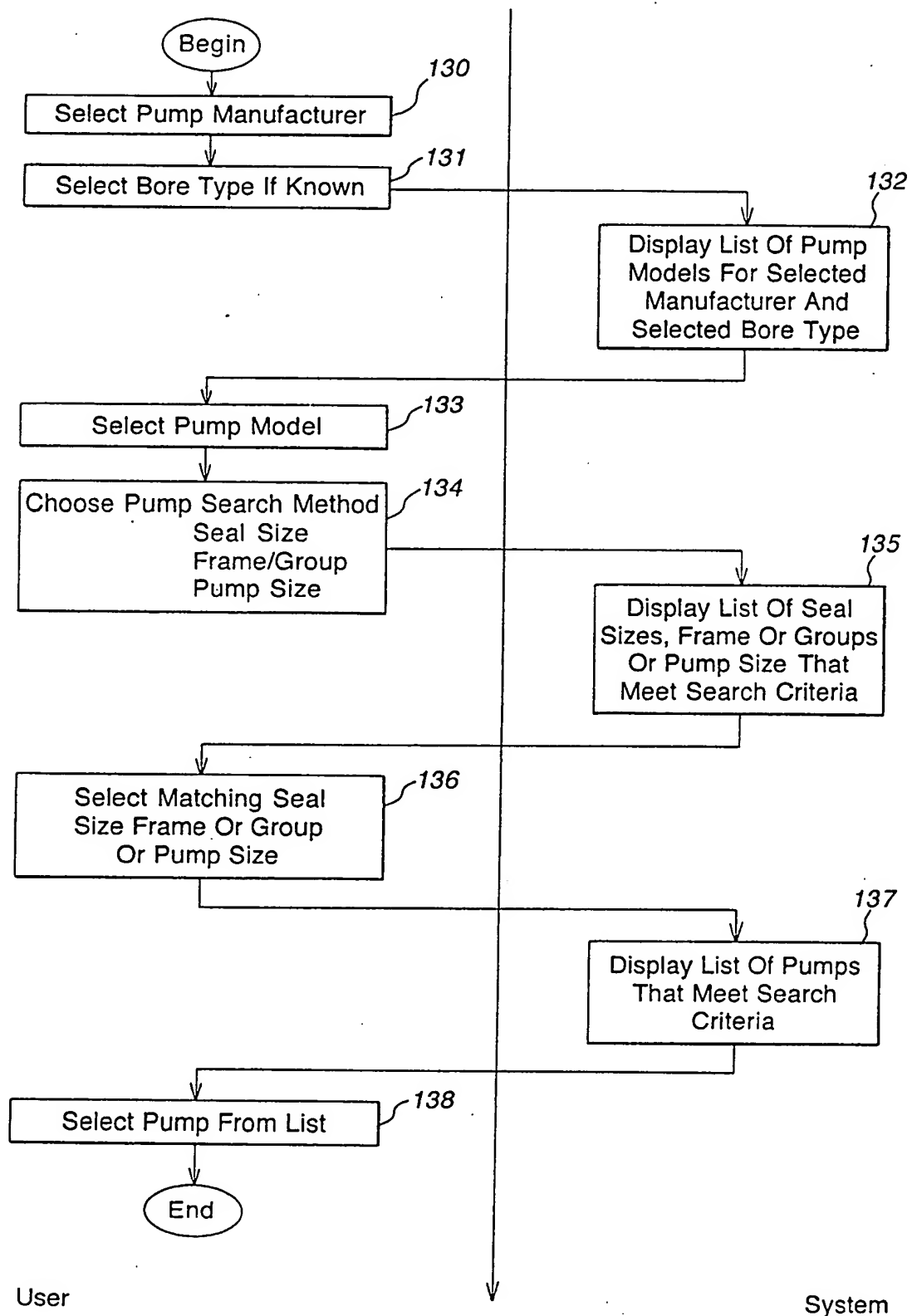


FIG. 7

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Quote #

Please select your pump from the following list  
or click Search Again to try again:

Manufacturer XXXXXX ~140

Number of Matching  
Pumps found= X ~141

PumpID	Model	Frame or Group	Bore Type ?	Packing or SealSleeve ?	Pump Size Summary	
91 142	XXX	X	XXXXXX XXXX	XXXXXX XXXXXX XXXXXX	XXXXXX XXXXXX XXXXXX XXXXXX	<div style="border: 1px solid black; padding: 2px; display: inline-block;">Select a Pump</div> <div style="border: 1px solid black; width: 30px; height: 20px; margin-top: 5px;"></div>
92 142	XXX	XXXX	XXXXXX XXXX	XXXXXX XXXXXX XXXXXX	XXXXXX XXXXXX XXXXXX XXXXXX	<div style="border: 1px solid black; width: 30px; height: 20px; margin-top: 5px;"></div>
94 142	XXX	X	XXXXX XXXXXXXX XXXX XXXXXXXXXXXX	XXXXXX XXXXXX XXXXXX XXXXXX	XXXXXX XXXXXX XXXXXX XXXXXX	<div style="border: 1px solid black; width: 30px; height: 20px; margin-top: 5px;"></div>

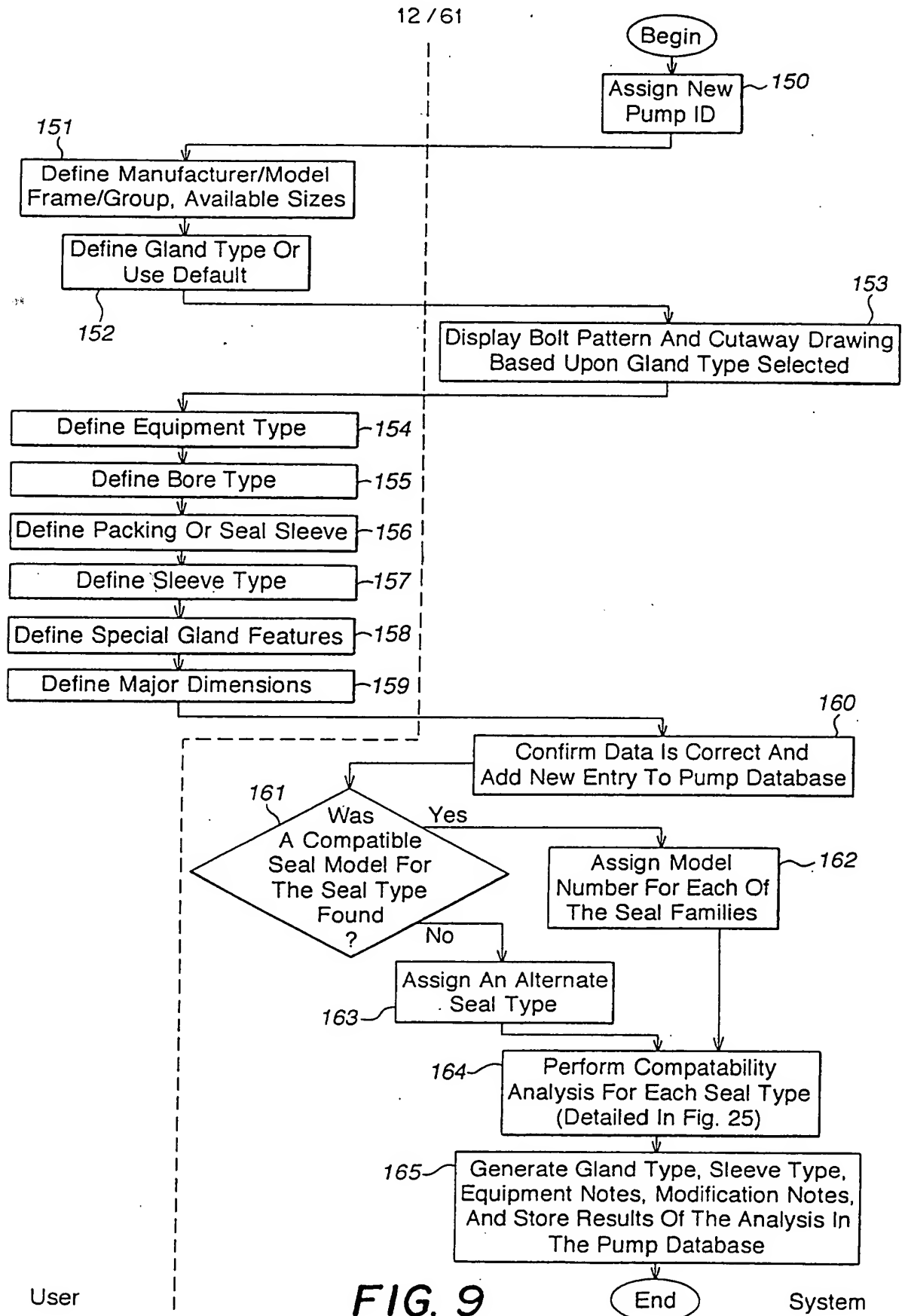
Please scroll down or up for more pumps.

Search again ~144

12.0

FIG. 8

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Northeast Equipment, Inc.



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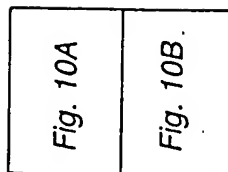


FIG. 10A

Fig. 10

Equipment Engineering Form					3.0
Pump ID	Manufacturer	Model	Frame Or Group	Available Sizes	174
3154	170			<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	
<p>Equipment Type 179</p> <p>Only select gland type if you are positive the standard design will not fit</p> <p>Gland Type <input type="checkbox"/> View Gland Types 176</p> <p>1 = XXXXXXXXXX 7 = XXXXXXXXXX                  2 = XXXXXXXXXX 8 = XXXXXXXXXX                  4 = XXXXXXXXXX 9 = XXXXXXXXXX                  6 = XXXXXXXXXX 10 = XXXXXXXXXX                  12 = XXXXXXXXXX</p>					
<p>Pump Bore Type 180</p> <p>Only select sleeve type if you are positive the standard design will not fit</p> <p>Sleeve Type <input type="checkbox"/> View Sleeve Types 182</p> <p>1 = XXXXXXXXXX                  2 = XXXXXXXXXX                  3 = XXXXXXXXXX                  4 = XXXXXXXXXX</p>					
<p>Pump Packing Or Seal Sleeve 181</p> <p>XXXXXXX</p>					
<p>Special Gland Features</p> <p>View Gland Features 183</p> <p>Yes No XXXXXXXXXX                  Yes No XXXXXXXXXX                  Yes No XXXXXXXXXX</p>					
<p>Equipment Identification</p> <p>Yes XXXXXXXXXX                  No XXXXXXXXXX                  Not Sure XXXXXXXXXX</p> <p>Sources Of Information: 201</p> <p>XXXXXXX                  XXXXXXXXXX                  XXXXXXXXXX                  XXXXXXXXXX                  XXXXXXXXXX</p>					

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Pump Dimen- sional Infor- mation 203 (?)	A	C	D	I	U	S	Q	M	R	W	Z	Round Gland Only		Pilot Details		Shaft/Sleeve Details	
	Solid Shaft/ Sleeve OD	Box Bore Depth	Box Depth	1st Obstr- uction	# of Bolts	Bolt Spac- ing	Bolt- ing Size	Stud Pro- ject- ion	Bolt Cir- cles	Horiz. Dist.	Vert. Dist.	E.O.D. Gland OD	M.O.D. Gland OD	ID Pilot If Applic- able	F OD Pilot Depth	E Od Pilot Face	G Sleeve Extend From Face

ROUND BOLT PATTERN

Equipment Modification	
O Yes	XXXXXXXXXX
O No	XXXXXXXXXX
O Not Sure	XXXXXXXXXX
How were pump/equipment dimensions obtained?	
O XXXXXXXXXX	
O XXXXXXXXXX	
O XXXXXXXXXX	
O XXXXXXXXXX	

FIG. 10B

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<p>Gland Type</p> <div style="border: 1px solid black; width: 50px; height: 30px; display: inline-block;"></div> <p>231</p>		<p>1 = XXXXXXXXXXXX 2 = XXXXXXXXXXXX 4 = XXXXXXXXXXXX 6 = XXXXXXXXXXXX</p>	<p>7 = XXXXXXXXXXXX 8 = XXXXXXXXXXXX 9 = XXXXXXXXXXXX 10 = XXXXXXXXXXXX 12 = XXXXXXXXXXXX</p>																																															
<p>Dimensional Type ~230</p> <p><input type="radio"/> A = No Problems - Go Ahead</p> <p><input type="radio"/> B = Verify 1 Dimension - Go Ahead. Not 100% sure.</p> <p><input type="radio"/> C = Verify All Dimensions - Receive Quote</p> <p><input type="radio"/> D = Supply all dimensions - Receive Quote</p>		<table border="1"> <tr> <th colspan="2">1</th> <th>2</th> <th>3</th> <th>4</th> <th colspan="3">5</th> </tr> <tr> <th>Seal Sleeve</th> <th>Packing Sleeve</th> <th>Bore</th> <th>Depth</th> <th>1st Obstr uct</th> <th># of Bolts</th> <th>Bolt Spacing</th> <th>Bolting Size</th> </tr> <tr> <td colspan="8"> <div style="border: 1px solid black; height: 20px; width: 100%;"></div> </td> </tr> </table>	1		2	3	4	5			Seal Sleeve	Packing Sleeve	Bore	Depth	1st Obstr uct	# of Bolts	Bolt Spacing	Bolting Size	<div style="border: 1px solid black; height: 20px; width: 100%;"></div>																															
1		2	3	4	5																																													
Seal Sleeve	Packing Sleeve	Bore	Depth	1st Obstr uct	# of Bolts	Bolt Spacing	Bolting Size																																											
<div style="border: 1px solid black; height: 20px; width: 100%;"></div>																																																		
<table border="1"> <tr> <th>Delta's Model #s</th> <th>Alter nate</th> <th>Enter Model#</th> <th>Gland Type</th> <th>Sleeve Type</th> <th colspan="3">Seal Fits Equipment</th> </tr> <tr> <td>Single-3000, 3001, 3005, 3400, 3700</td> <td>211</td> <td>210</td> <td>212</td> <td>213</td> <td>Note1</td> <td>Note2</td> <td>Note3 Note4</td> </tr> <tr> <td>OEM Single</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>214</td> </tr> <tr> <td>Double-3200, 3201, 3205, 3800</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Double 3220, 3225, 3221</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </table>		Delta's Model #s	Alter nate	Enter Model#	Gland Type	Sleeve Type	Seal Fits Equipment			Single-3000, 3001, 3005, 3400, 3700	211	210	212	213	Note1	Note2	Note3 Note4	OEM Single							214	Double-3200, 3201, 3205, 3800								Double 3220, 3225, 3221								<table border="1"> <tr> <td>504C 216</td> <td>507C 217</td> <td>506C 218</td> <td>505C 219</td> <td>508C 220</td> <td>509C 221</td> <td>511C 222</td> <td>514C 223</td> </tr> </table>	504C 216	507C 217	506C 218	505C 219	508C 220	509C 221	511C 222	514C 223
Delta's Model #s	Alter nate	Enter Model#	Gland Type	Sleeve Type	Seal Fits Equipment																																													
Single-3000, 3001, 3005, 3400, 3700	211	210	212	213	Note1	Note2	Note3 Note4																																											
OEM Single							214																																											
Double-3200, 3201, 3205, 3800																																																		
Double 3220, 3225, 3221																																																		
504C 216	507C 217	506C 218	505C 219	508C 220	509C 221	511C 222	514C 223																																											
Single																																																		
Double																																																		
OEM																																																		

**FIG. 11A**

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SleeveType

1 = XXXXXXXXXXXX  
2 = XXXXXXXXXXXX  
3 = XXXXXXXXXXXX  
4 = XXXXXXXXXXXX

232

[illegible]

Fig. 11A

**Fig. 11B**

Fig. 11

**FIG. 11B**



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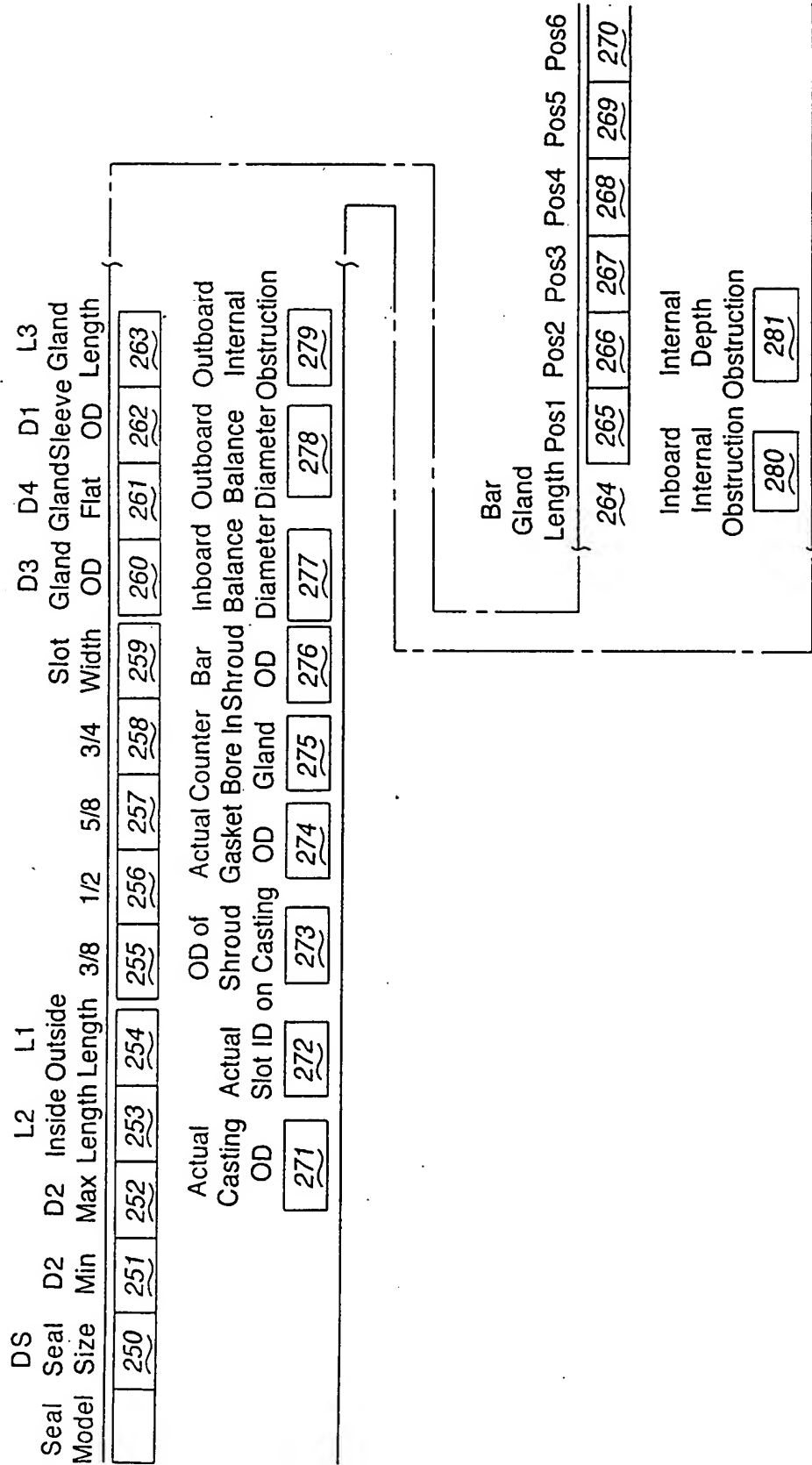


FIG. 12

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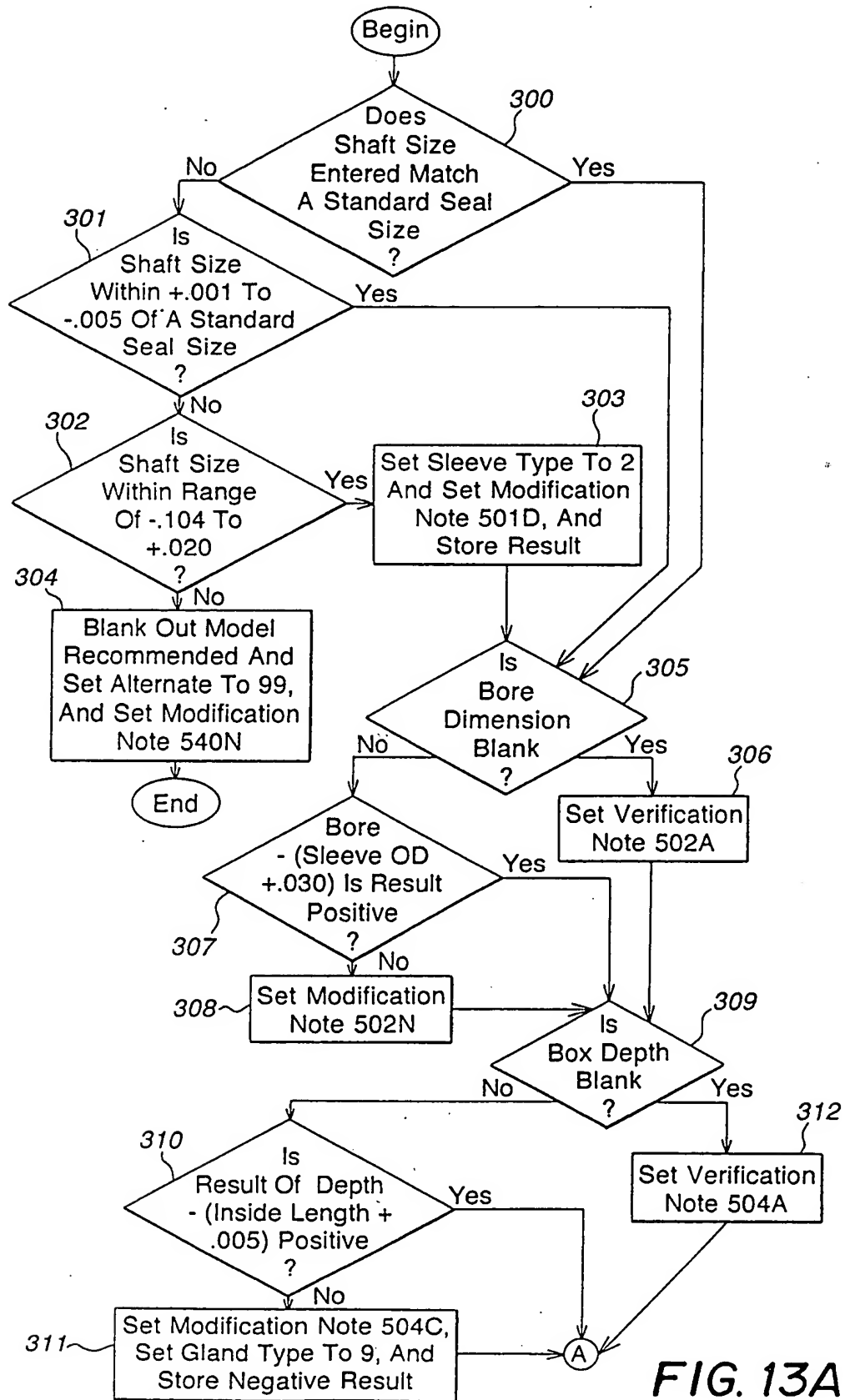


FIG. 13A

APPARATUS AND METHOD FOR SELECTING  
A MECHANICAL SEAL; C. C. Bjornson, et al.;  
Northeast Equipment, Inc.

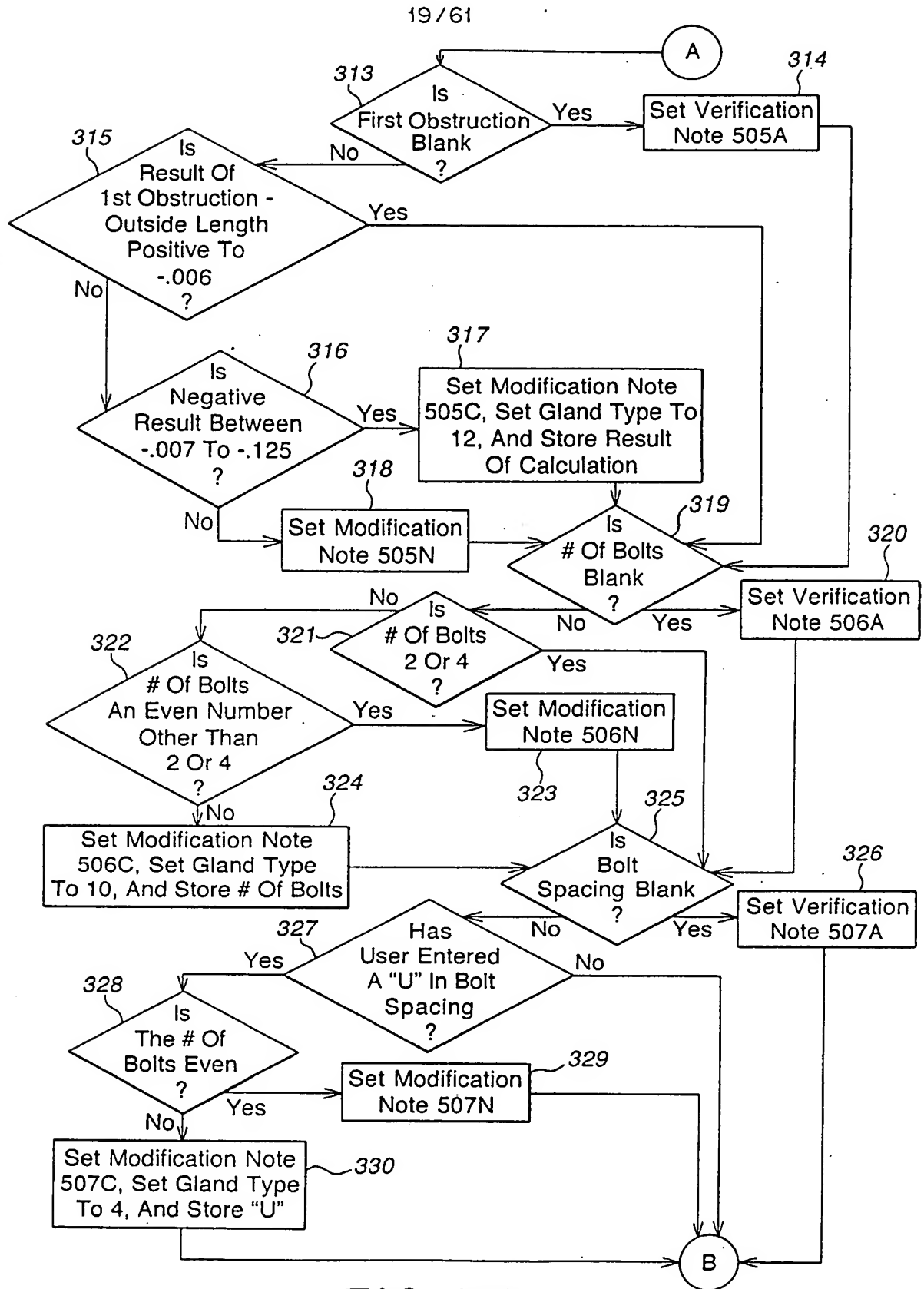


FIG. 13B

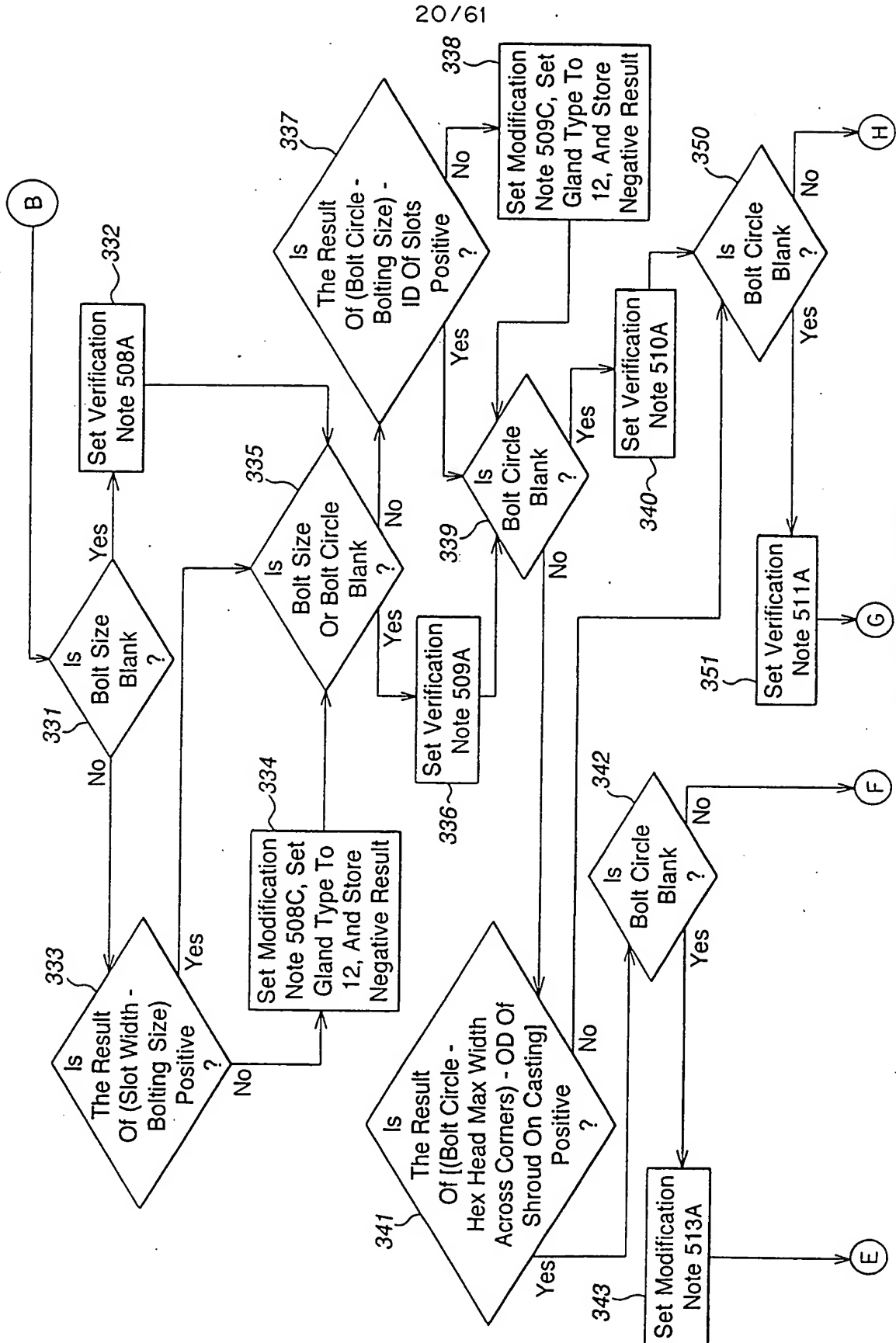


FIG. 13C(1)



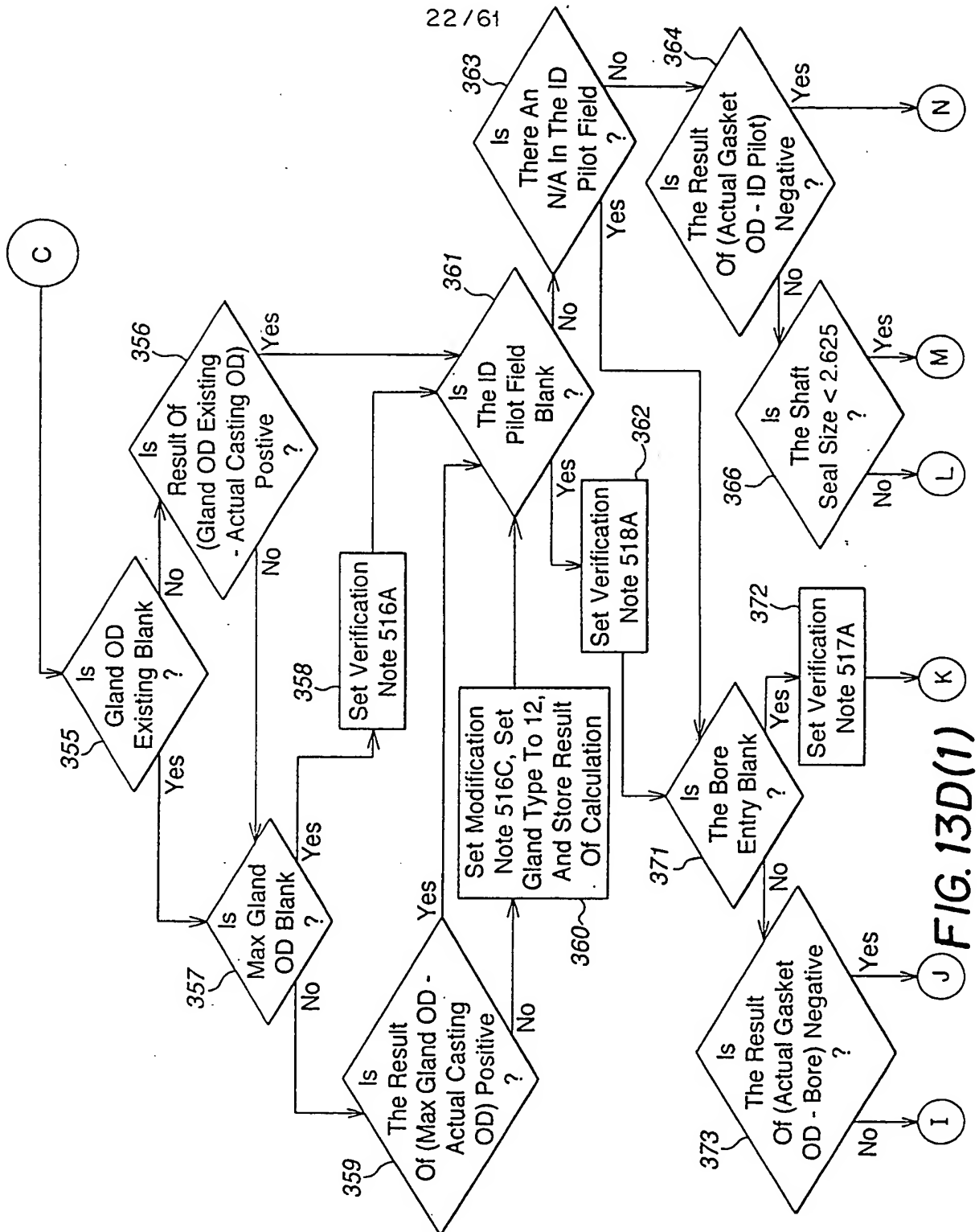


FIG. 13D(1)

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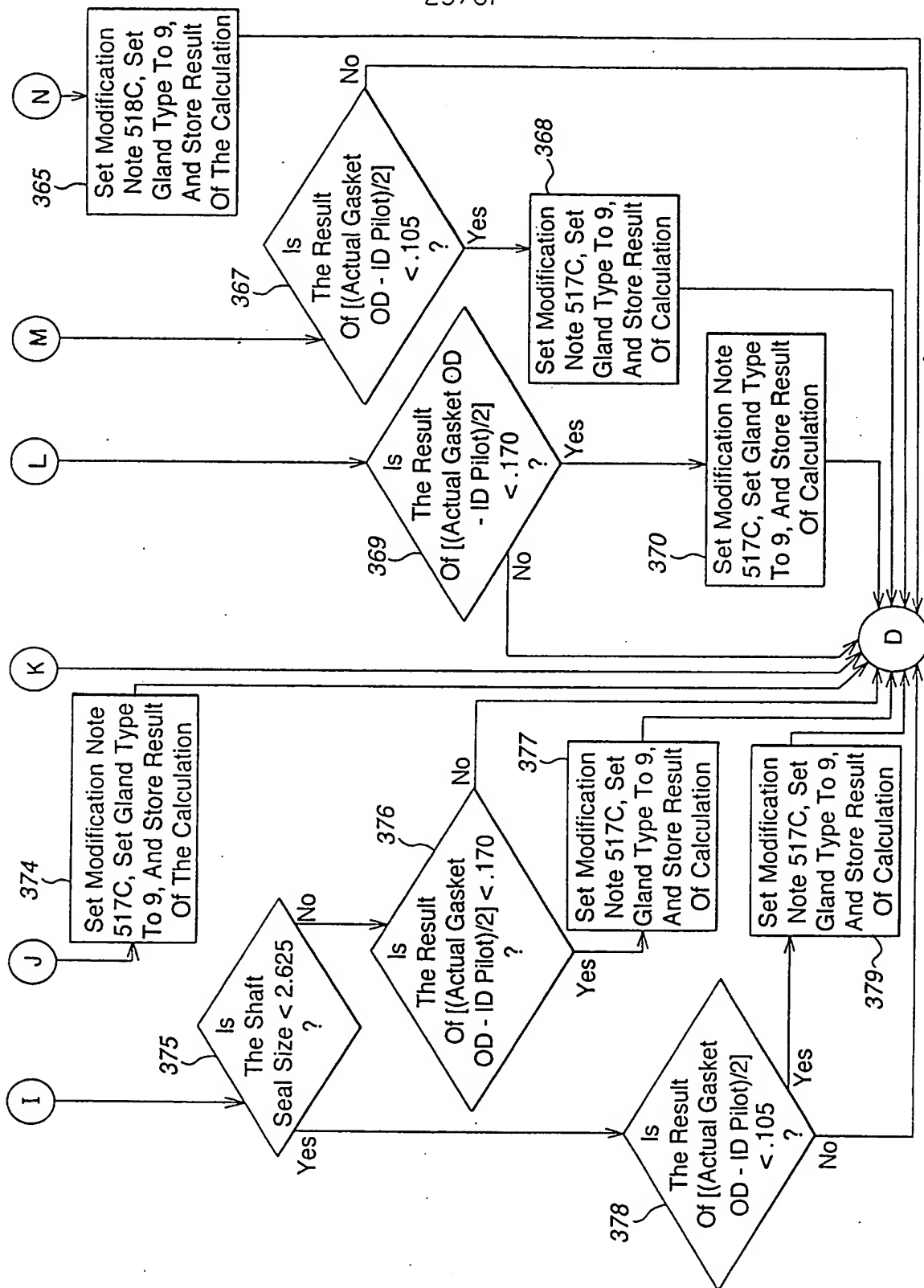


FIG. 13D(2)

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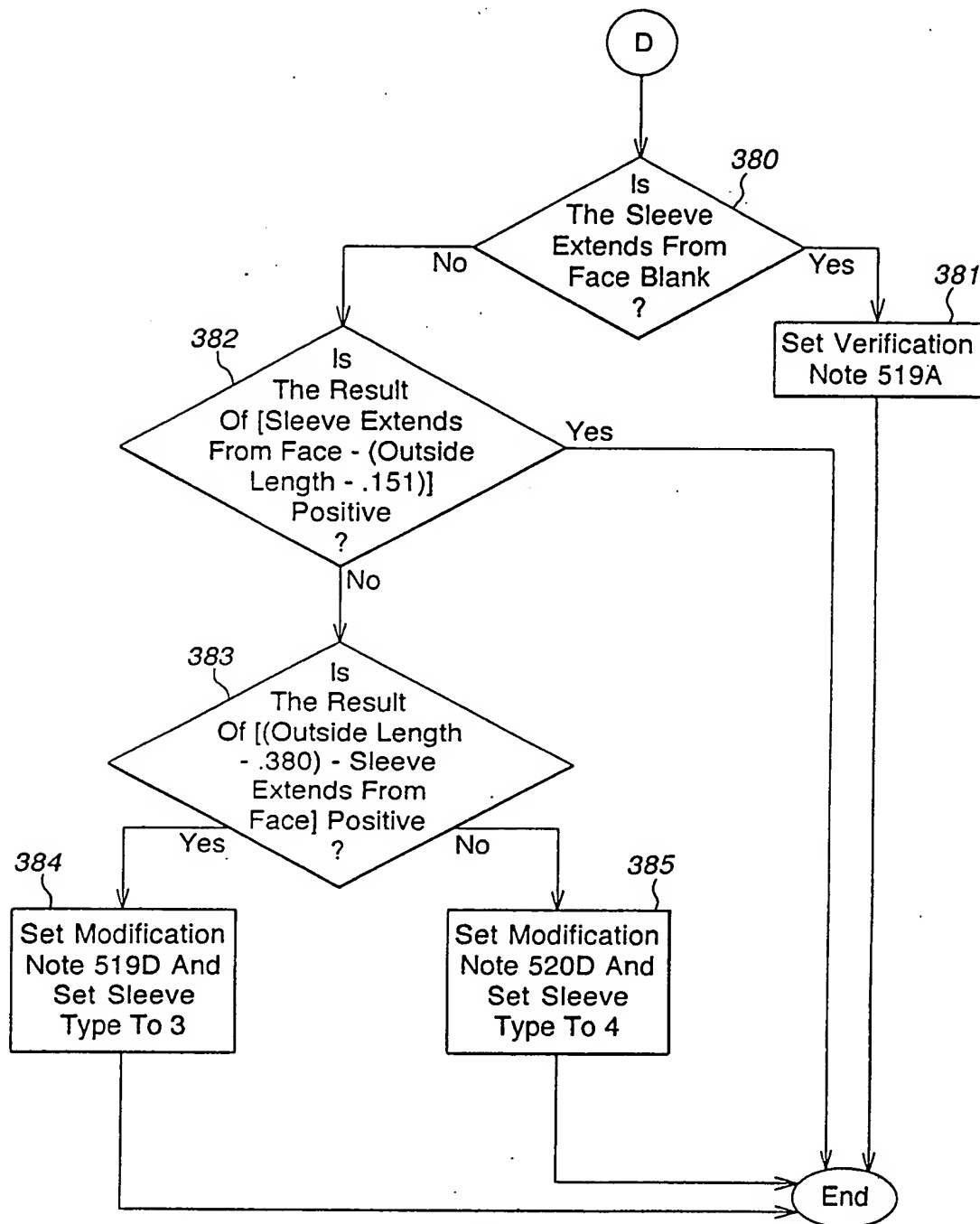


FIG. 13E



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Quote#	
<p style="text-align: center;">For a recommended Seal Selection Method from the list below please choose the Seal Model you are currently using:</p> <p>Current Seal Model: AnchorModel 16/ Single Seal</p> <p>The manufacturer suggests selecting option 3 from the menu below</p>	
421 ~	Competitive Analysis
422 ~	Internal Analysis
<b>Material Code Key</b>	
<p>To cross reference your current seal by the materials of construction, click the Cross Reference button.</p>	
437 ~	Cross Reference
<b>Seal Selection Method:</b>	
<p>System recommends a single or double cartridge seal for a given chemical and pump combination, selecting from single cartridge models 3000, 3001, 3005, 3400, and 3700, and double cartridge models 3220, 3221, and 3800, with seal sizes 1 inch to 5 inches.</p> <p>Please change seal selection method or "continue":</p> <ul style="list-style-type: none"><li>○1 You pick the seal ~423</li><li>⊙2 System recommends a single or double cartridge seal ~424</li><li>○3 System recommends a single cartridge seal ~425</li><li>○4 System recommends a double cartridge seal ~426</li><li>○5 System recommends a double cartridge seal with pumping ring ~427</li><li>○6 System recommends an OEM single cartridge seal ~428</li><li>○7 System recommends a split seal ~431</li><li>○8 System recommends a single bellows cartridge seal ~432</li><li>○9 System recommends a double bellows cartridge seal ~433</li><li>○10 Various OEM "Component"; Rotaries, Stationaries, Glands ~434</li></ul>	
<div style="border: 1px solid black; padding: 5px; display: inline-block;">View Product Brochure</div>	
<div style="border: 1px solid black; padding: 5px; display: inline-block;">Select Materials</div>	
429	
430	

13.0

**FIG. 14**

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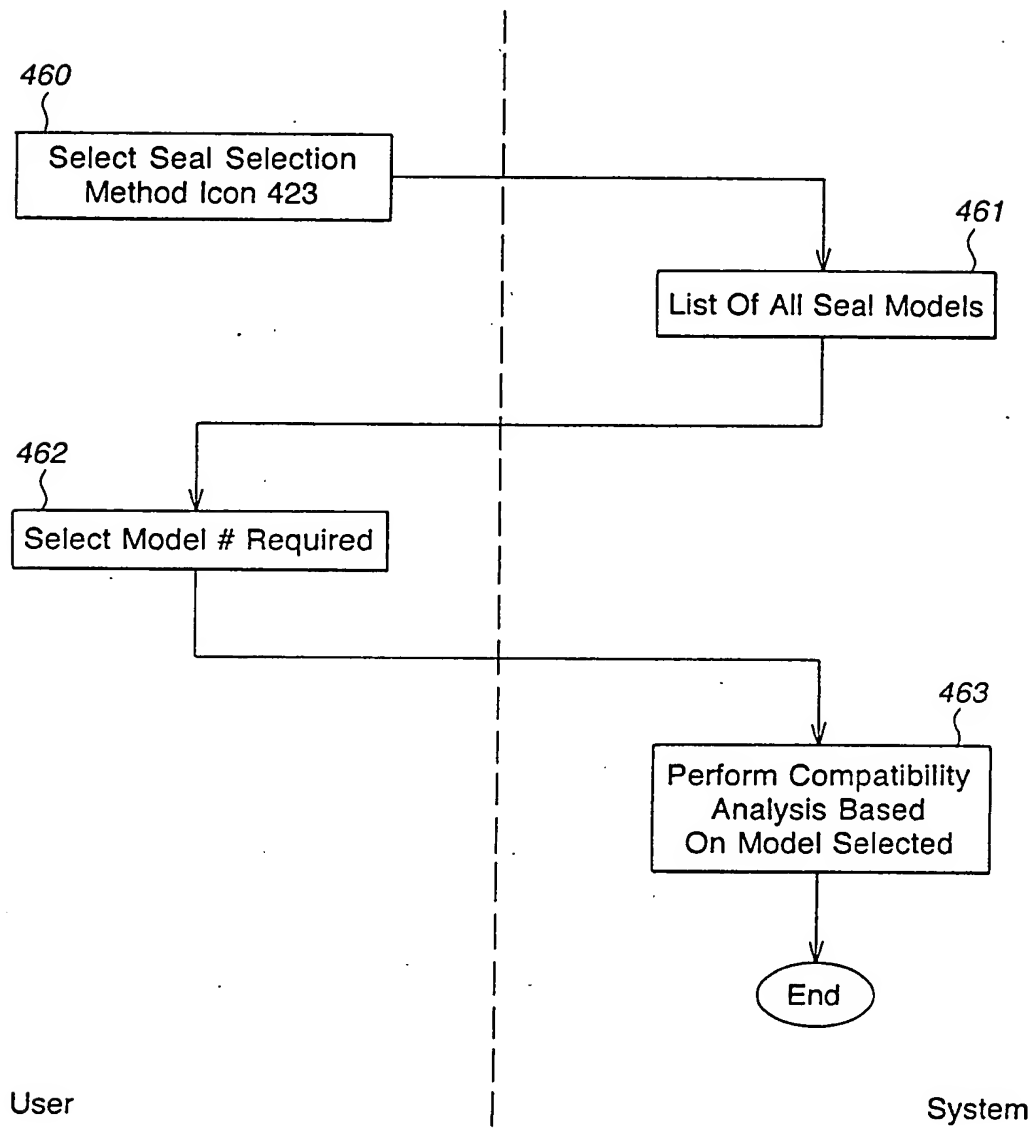
<div data-bbox="300 304 665 378">Materials of Construction</div> <div data-bbox="349 388 568 430">XXXXXXXXXX</div> <div data-bbox="422 441 552 483">Metals</div> <div data-bbox="365 483 584 525">XXXXXXXXXX</div> <div data-bbox="300 514 584 619"> <input type="radio"/> XXXXXXXXXX  <input type="radio"/> XXXXXXXXXX  <input type="radio"/> XXXXXXXXXX         </div> <div data-bbox="422 630 552 672">Faces</div> <div data-bbox="422 672 560 714">Inboard:</div> <div data-bbox="300 703 641 850"> <input type="radio"/> XXXXXXXXXX  <input type="radio"/> XXXXXXXXXXXXXXXX  <input type="radio"/> XXXXXXXXXXXXXXXX  <input type="radio"/> XXXXXXXXXXXXXXXX         </div> <div data-bbox="422 850 576 892">Outboard:</div> <div data-bbox="300 892 641 976"> <input checked="" type="radio"/> XXXXXXXXXXXXXXXX  <input type="radio"/> XXXXXXXXXXXXXXXX         </div> <div data-bbox="381 997 576 1039">Elastomers</div> <div data-bbox="300 1050 641 1228"> <input type="radio"/> XXXXXXXXXX  <input type="radio"/> XXXXXXXXXXXXXXXX  <input type="radio"/> XXXXXXXXXX  <input type="radio"/> XXXXXXXXXXXXXXXX  <input type="radio"/> XXXXXXXXXX         </div> <div data-bbox="430 1249 552 1291">Plans</div> <div data-bbox="341 1312 560 1449">           XXXXXX            XXXXXX            XXXXXXXXXXXX            XXXXXX         </div>	<div data-bbox="698 304 941 378">Process Fluids Quick Reference</div> <div data-bbox="714 388 941 430">XXXXXXXXXX</div> <div data-bbox="787 441 917 483">Metals</div> <div data-bbox="714 493 974 630">           XXXXXXXXXXXXXXXX            XXXXXXXXXX            XXXXXXXXXXXXXXXX            XXXXXXXXXX         </div> <div data-bbox="787 630 917 672">Faces</div> <div data-bbox="706 682 982 892">           XXXXXXXXXX            XXXXXXXXXXXXXXXX            XXXXXXXXXX            XXXXXXXXXXXXXXXX            XXXXXXXXXX            XXXXXXXXXX         </div> <div data-bbox="738 913 933 955">Elastomers</div> <div data-bbox="706 966 982 1144">           XXXXXXXXXXXXXXXX            XXXXXXXXXXXXXXXX            XXXXXXXXXXXXXXXX            XXXXXXXXXX            XXXXXXXXXXXXXXXX         </div> <div data-bbox="787 1165 909 1207">Plans</div> <div data-bbox="706 1228 982 1407">           XXXXXXXXXXXXXXXX            XXXXXXXXXX            XXXXXXXXXX            XXXXXXXXXXXXXXXX            XXXXXXXXXXXXXXXX         </div> <div data-bbox="787 1428 909 1470">Notes</div>	<div data-bbox="1031 304 1429 357">Current Seal Construction</div> <div data-bbox="1169 367 1299 409">Model</div> <div data-bbox="1169 441 1299 483">Design</div> <div data-bbox="1136 504 1242 546">Size</div> <div data-bbox="1136 546 1323 588">Metal Parts</div> <div data-bbox="1112 609 1356 651">Gland Features</div> <div data-bbox="1112 672 1356 724">Spring Loaded</div> <div data-bbox="1161 745 1307 787">Bellows</div> <div data-bbox="1063 819 1396 871">Inboard Rotary Faces</div> <div data-bbox="1055 903 1404 955">Outboard Rotary Faces</div> <div data-bbox="1088 976 1380 1029">Stationary Design</div> <div data-bbox="1039 1060 1421 1113">Inboard Stationary Faces</div> <div data-bbox="1031 1144 1429 1197">Outboard Stationary Faces</div> <div data-bbox="1128 1228 1323 1281">Elastomers</div> <div data-bbox="1112 1323 1339 1396"></div>
---	---	--

Quote# 1960

26.0

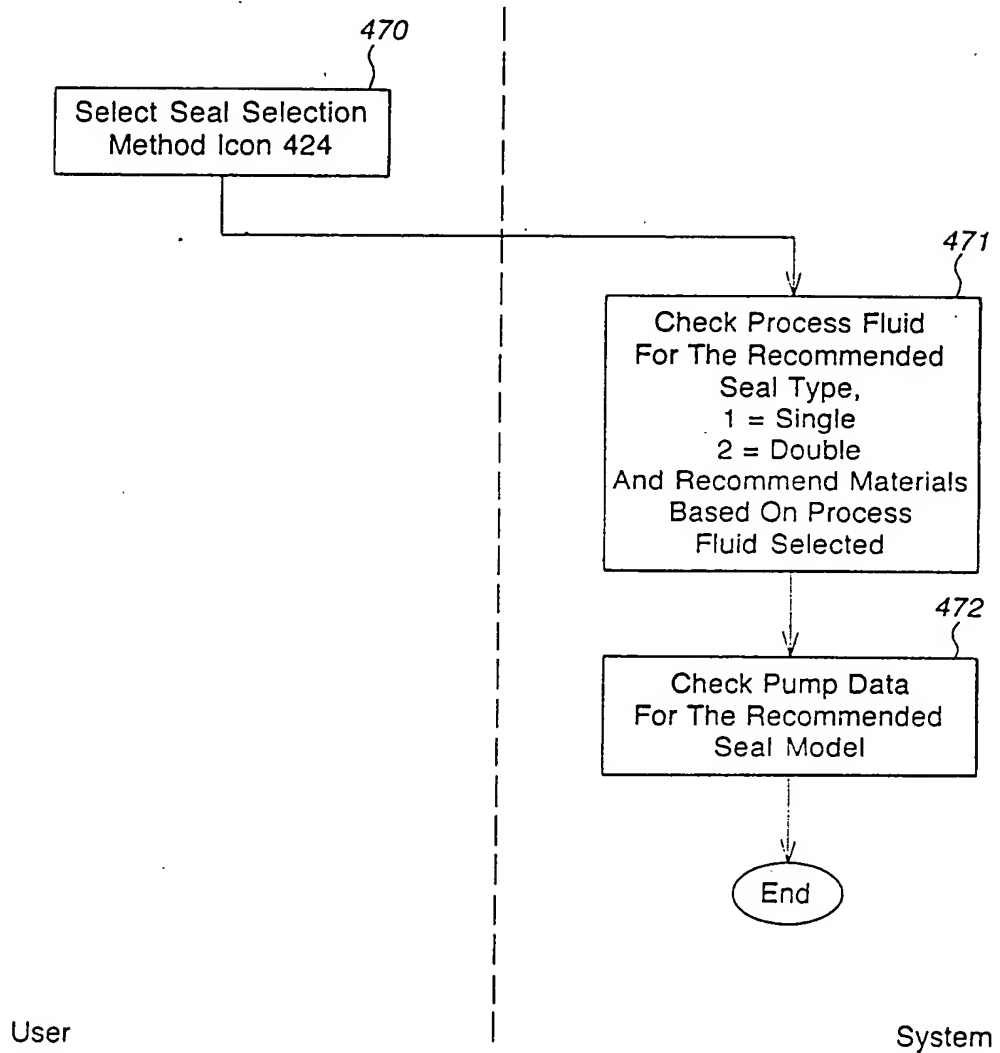
FIG. 15

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**FIG. 16**

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**FIG. 17**

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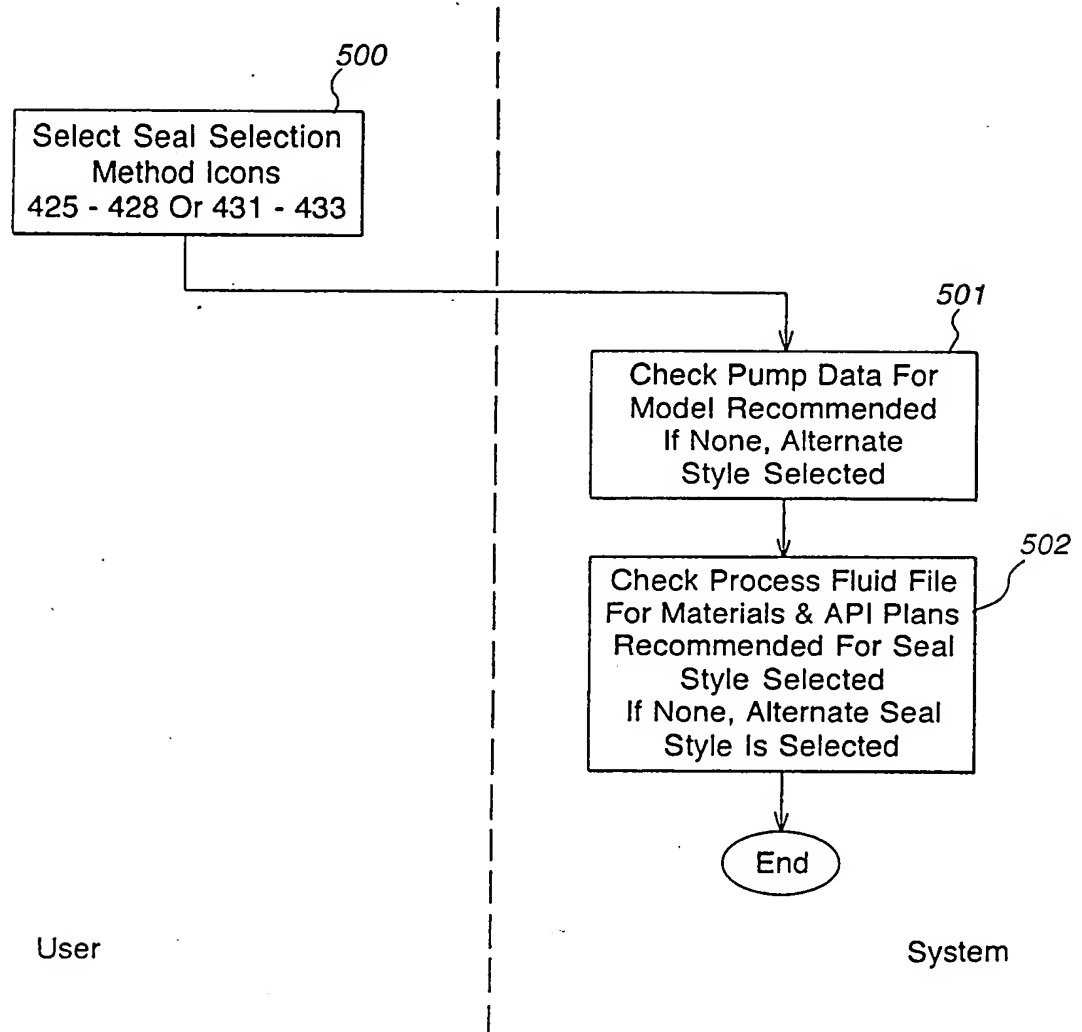
Process Fluid Information											
ETHANE (Methylmethane)											
		480		483		484		485		486	
%	Concen	Temp	SEC-1	SEC-2	SH&C	DEC-1	DEC-2	DH&C			
481		482	11			53	97				
ORingSeal			Single-3000, 3001, 3005, 3400, 3700, sc3		Alter nate	Single-3500, sc6		Alter nate			
sc2											
21AV	AA		1:AV A			1:AV A					
								488		489	
										489	

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490										491				492				493		494	495		
XXX	XXX	X	X	X	X	X	X	XX	XX	X	X	X	X	X	X	X	X	Vis cos ity	Add'l Info	Chem Note 1	Chem Note 2		
A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A		A100	C1	C4		

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**FIG. 19**

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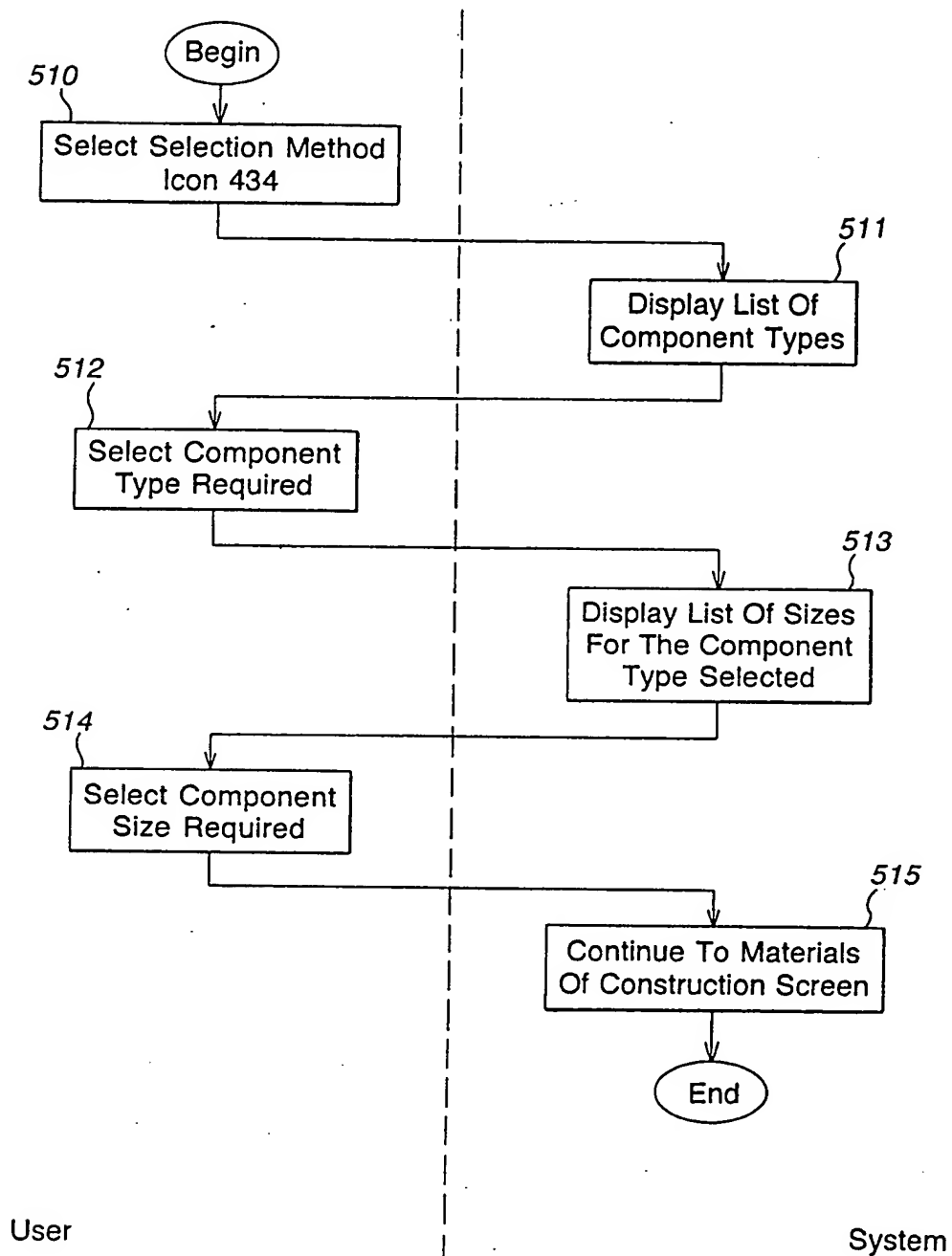


FIG. 20



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Select A Barrier Fluid						QuoteID	1828
Fluid		Temperature Limitations				Comments	
Click On The Barrier Fluid You Are Currently Using		Lower		Upper			
F	C	F	C				
Automatic Transmission Fluid		50	10	190	88	Ethylene glycol is VHAP in some states EPR unacceptable. VHAP, viton unacceptable.	
EG/Water, 60/40		-50	-46	210	99		
Kerosene	520	5	-15	290	143		
Methanol		-90	-68	35	2		
Mineral Oil - SAE10		-140	-95	155	67		
N - Propyl Alcohol		40	4	160	71		
No. 2 Diesel & Fuel		15	-9	290	143		
Propylene Glycol/Water, 60/40		-50	-46	210	99		
Royal Purple FDA		-50	-46	400	204		
Water		45	7	185	85		
Other						Freezes at 32 degrees F	
View Barrier Fluid Considerations							

Quote# 1828

28.0

FIG. 21

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Choose Modification Strategy

Please select the seal modification approach you want to use.

Select Modification Strategy

☒ Supplier will supply a seal to fit equipment

☐ Customer will modify equipment to fit seal

?

525

29.0

**FIG. 22**

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Part Code XXXXXXXXXXXX		Delivery on or About	
Balanced Spring Loaded Stationary Design Double Cartridge Seal		<div style="border: 1px solid black; width: 100px; height: 20px; display: inline-block;"></div>	

Available Optional Features		<input type="button" value="View Graphic of Optional Features"/>	
-----------------------------	--	--	--

The Manufacturer recommends the following optional features based on the process fluid chosen and the environmental controls selected.

Selected	Recommended Description	
<input checked="" type="radio"/> Yes <input type="radio"/> No	XXXXXXXXXXXXXXXXXXXX	
<input type="radio"/> Yes <input checked="" type="radio"/> No	XXXXXXXXXXXXXXXXXXXX	
<input checked="" type="radio"/> Yes <input type="radio"/> No	XXXXXXXXXXXX XXXXXXXXXXXXXXX	530
<input checked="" type="radio"/> Yes <input type="radio"/> No	XXXXXXXXXXXX	
<input type="radio"/> Yes <input checked="" type="radio"/> No	XXXXXXXXXXXXXXXXXXXX	534
<input type="radio"/> Yes <input checked="" type="radio"/> No	XXXXXXXXXXXXXXXXXXXX	

Available Additional Products		<input type="button" value="View Graphic of Additional Products"/>	
-------------------------------	--	--	--

<input checked="" type="radio"/> Yes <input type="radio"/> No	XXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXX	XXXX
<input type="radio"/> Yes <input checked="" type="radio"/> No	XXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXX	532 XXXX

Due to the API Plans selected, the following additional products are recommended.

Selected	Recommended Description	Each	Number	Amount
<input type="radio"/> Yes <input checked="" type="radio"/> No	XXXXXXXXXXXXXXXXXXXX	XXXXXX	X	XXX
<input type="radio"/> Yes <input checked="" type="radio"/> No	XXXXXXXXXXXXXXXXXXXX	XXXXXX	X	XXX
<input type="radio"/> Yes <input checked="" type="radio"/> No	XXXXXXXXXXXXXXXXXXXX	XXXXXX	X	XXX
<input type="radio"/> Yes <input checked="" type="radio"/> No	XXXXXXXXXXXXXXXXXXXX	XXXXXX	X	XXX
<input type="radio"/> Yes <input checked="" type="radio"/> No	533 XXXXXXXXXXXXXXX	XXXXXX	X	XXX
<input type="radio"/> Yes <input checked="" type="radio"/> No	XXXXXXXXXXXXXXXXXXXX	XXXXXX	X	XXX
<input type="radio"/> Yes <input checked="" type="radio"/> No	XXXXXXXXXXXX	XXXX	X	XXX
<input type="radio"/> Yes <input checked="" type="radio"/> No	XXXXXXXXXXXXXXXXXXXX	XXXX	X	XXX
<input type="radio"/> Yes <input checked="" type="radio"/> No	XXXXXXXXXXXXXXXXXXXX	XXXX	X	XXX
<input type="radio"/> Yes <input checked="" type="radio"/> No	XXXXXXXXXXXXXXXXXXXX	XXXX	X	XXX

**FIG. 23**

APPARATUS AND METHOD FOR SELECTING  
A MECHANICAL SEAL; C. C. Bjornson, et al.;  
Northeast Equipment, Inc.

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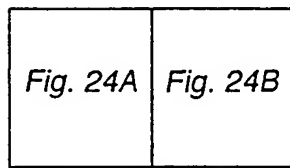
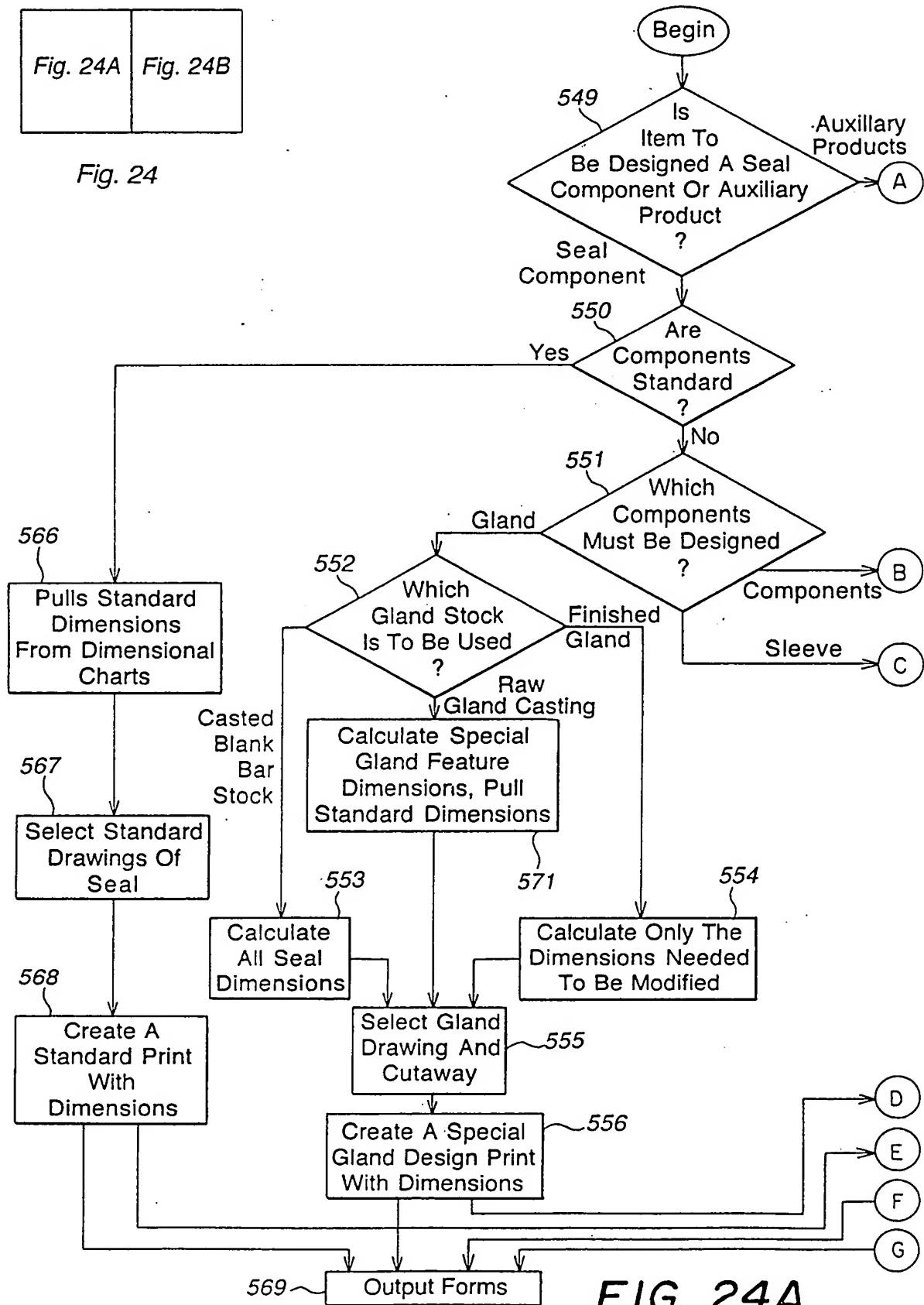


Fig. 24



APPARATUS AND METHOD FOR SELECTING  
A MECHANICAL SEAL; C. C. Bjornson, et al.;  
Northeast Equipment, Inc.

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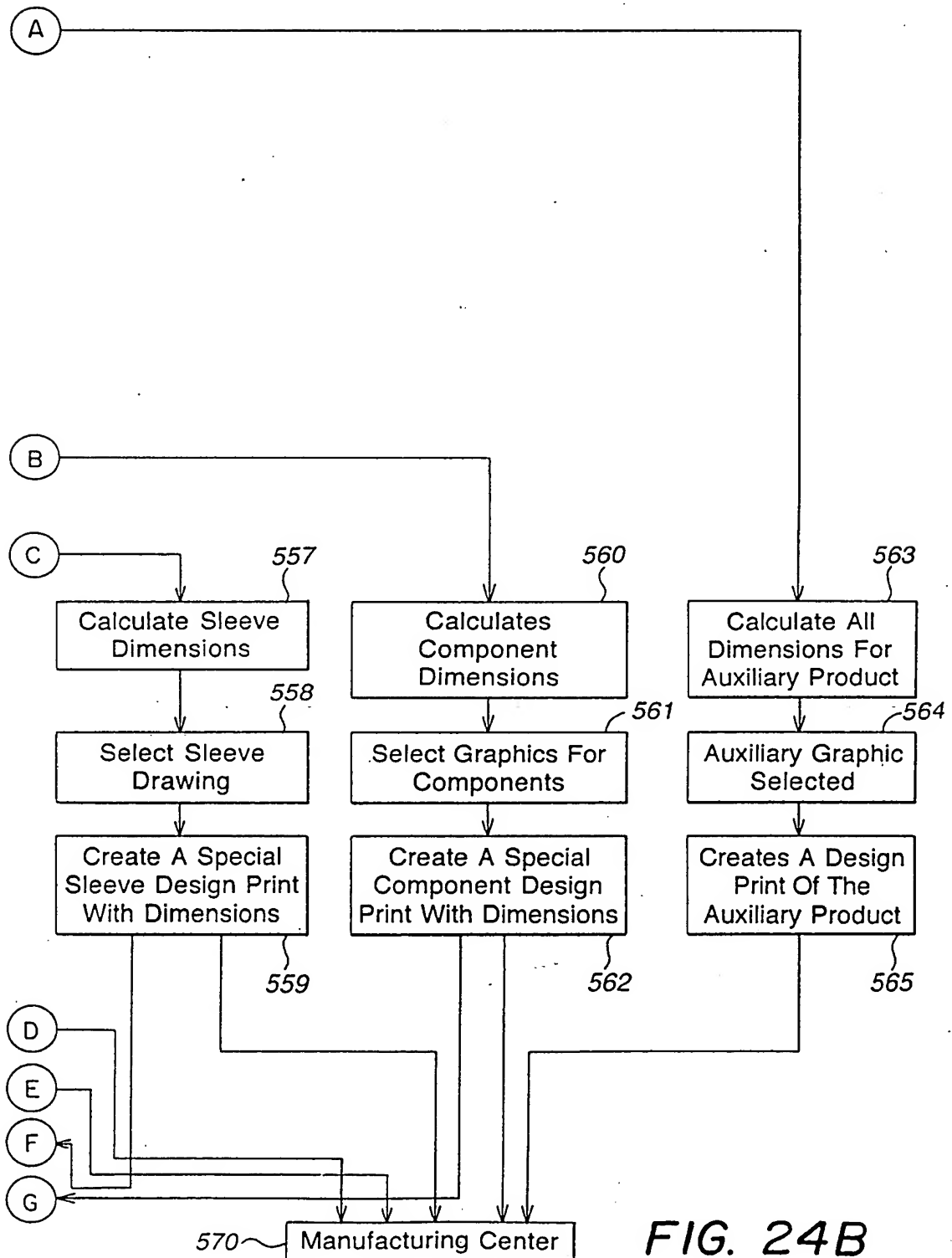


FIG. 24B

APPARATUS AND METHOD FOR SELECTING  
A MECHANICAL SEAL; C. C. Bjornson, et al.;  
Northeast Equipment, Inc.

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Seal Model	DS Seal Size	Glands 1, and 12 Standard Drawings and Casting "A & B" Materials				Glands 1, 9, and 12 Bar Stock Casting "C & W" Materials Use Standard # if No Bar Drawing			
		A	C	D	F	A	C	D	F
3201	1.125	A1	C1	D1	F1	BarA1	BarC1	BarD1	BarF1
3201	1.375	A1	C1	D1	F1	BarA1	BarC1	BarD1	BarF1
3201	1.750	A2	C2	D2	F2	BarA2	BarC2	BarD2	BarF2
3201	1.875	A2	C2	D2	F2	BarA2	BarC2	BarD2	BarF2
3201	2.125	A2	C2	D2	F2	BarA2	BarC2	BarD2	BarF2
3201	2.250	A2	C2	D2	F2	BarA2	BarC2	BarD2	BarF2
3201	2.375	A2	C2	D2	F2	BarA2	BarC2	BarD2	BarF2
3201	2.500	A2	C2	D2	F2	BarA2	BarC2	BarD2	BarF2
3201	2.625	A2	C2	D2	F2	BarA2	BarC2	BarD2	BarF2
3201	2.750	A2	C2	D2	F2	BarA2	BarC2	BarD2	BarF2
3201	3.000	A2	C2	D2	F2	BarA2	BarC2	BarD2	BarF2
3201	3.750	A2	C2	D2	F2	BarA2	BarC2	BarD2	BarF2
3201	4.500	A2	C2	D2	F2	BarA2	BarC2	BarD2	BarF2
3201	4.75	A2	C2	D2	F2	BarA2	BarC2	BarD2	BarF2

FIG. 25A

Fig. 25A	Fig. 25B
----------	----------

Fig. 25

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**FIG. 25B**

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FIG. 26A

600			601		602		603		604	
Pump ID XXXX			Manufacturer		Model		One Group		Shaft Seal Size Dimension	
	Compatibility Analyzer Results	Description	Dimension Name		Standard Dimension		Modified Dimension			
12			XX						Problem Check	
505C		XXXXXXXXXX	XX							
508C		XXXXXXXXXX	XXXXXX							
509C		XXXXXXXXXX	XXXXXXXX							
511C		XXXXXXXXXX	XXXXXXXX							
			XXXXXXXX							
516C		XXXXXXXXXX	XXXXXX							
504C		XXXXXXXXXX	XX							
			XX							
			XX							
9			XXXXXXXXXX							
514C		XXXXXXXXXX	XXXXXXXX							
517C		XXXXXXXXXX	XXXXXXXX							
518C		XXXXXXXXXX	XXXXXXXX							
4	507C	XXXXXXXXXX								
10	506C	XXXXXXXXXX								

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A Notes 610		N Notes 611		Dimension Type	
				A = No Problems B = Verify 1 dimension - Not 100% sure. C = Verify all dimensions - Receives quote. D = Supply all dimensions - Receive quotes.	
Sleeve					
2	501D	XXXXXXXXXX	XXXXXXXXXX	XXXXXXXXXX	XXXXXXXXXX
3	519D	XXXXXXXXXX	XXXXXXXXXX	XXXXXXXXXX	XXXXXXXXXX
4	520D	XXXXXXXXXX	XXXXXXXXXX		

Delta's Model #s	Alter-nate	Enter Model#	Gland Type	Sleeve Type	Seal Fits Equipment Note1 Note2 Note3 Note4 Note5 Note6 Note7	Equipment Fits Seal Note1 Note2 Note3 Note4 Note5 Note6 Note7
Single - 3000, 3001 3005, 3400, 3700						

Fig. 26A

Fig. 26B

FIG. 26B

Fig. 26

APPARATUS AND METHOD FOR SELECTING  
A MECHANICAL SEAL; C. C. Bjornson, et al.;  
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Bolting Specifications						
Bolting Size	Hex Nut Max Width Across Corners	Hex Nut Width Across Flats	Cap Screw Max Head Diameter	Hex Head Shroud Clearance	Special "S" Slot/Hole Width	Slot Clearance
.25						
.312						
.375						
.437						
.500						
12MM						
.562						
.625						
16MM						
.750						
.875						
1.000						
1.125						
1.250						
1.375						
1.500						
<u>Gasket Surface</u>						626
Size Range			Gasket Surface			
.890-2.520						
2.521-3.020						
3.021-5.020						
5.021-7.500						

**FIG. 27**

APPARATUS AND METHOD FOR SELECTING  
A MECHANICAL SEAL; C. C. Bjornson, et al.;  
Northeast Equipment, Inc.

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Manufacturers Special Seal Print		Return To Standard Proposal	39.0
GlandType 9		Special Part # Work Order # Checked By: _____ Date: _____ Approved By: _____ Date: _____	Slot ID Detail 
Counterbore Gasket Detail 			
For In House Use Only			
Customer/Order Information		Seal Information	
Quote #	Pump ID # XXX	Part Number: XXXXXXXXXXXX	
Date	Pump Mfg: XXXXXX	Seal Size: XXXXXX Description	
Customer Information		Features XXXXXXXX XXXXXXXXXX	
		Included XXXXXXXX XXXXXXXXXX	
		In Gland	
Bore Type: XXXXXXXXXXXX		Metals:	
Gland/Sleeve: XXXXXXXXXXXXXXXX		Inboard:	
Rotary Face: XXXXX		Outboard:	
Stationary Face: XXXX		Rotary Face: XX	
Elastomers: XXX		Stationary Face: XX	
PO#: _____		Elastomers: XX	

**FIG. 28**

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**Fig. 29A**

**Fig. 29B**

Fig. 29

[illegible]

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3200	2.500
3200	2.625
3200	2.750
3200	3.000
3200	3.250
3200	3.500
3200	3.750
3200	4.000
3200	4.250
3200	4.500

FIG. 29B

**APPARATUS AND METHOD FOR SELECTING  
A MECHANICAL SEAL; C. C. Bjornson, et al.;  
Northeast Equipment, Inc.**

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Fig. 30A(1)

Fig. 30A(2)

**FIG. 30A(1)**

Fig. 30A

<div style="border: 1px solid black; padding: 2px; transform: rotate(-90deg); transform-origin: center;"> MECHANICAL SEALS EQUIP. </div>	<div style="border: 1px solid black; padding: 2px;">  Quote # XXXX    Prepared On: _____    Valid Until: _____ </div>	<div style="border: 1px solid black; padding: 2px;"> Prepared for: _____    Prepared by: _____  Your Salesperson's Name Here  Your Company Name Here  Your Address  Your City, State _____    Your Zip _____  Your Phone _____ (Phone)  Your Fax _____ (Fax) </div>																									
	<div style="border: 1px solid black; padding: 2px; transform: rotate(-90deg); transform-origin: center;"> EQUIP. </div>	<div style="border: 1px solid black; padding: 2px;"> Equipment Tag: _____    Equipment Serial Number _____  Pump Mfg: XXXXXXXXXXXX  Pump Model: XXXXXXXXXXXXXXXXXXXX  Bore Type: XXXXXXXXXXXX  Sleeve Type: XXXXXXXXXXXXXXXX  Equipment Type: XXXXXXXXXXXXXXXXXXXX </div>																									
<div style="border: 1px solid black; padding: 2px; transform: rotate(-90deg); transform-origin: center;"> OPERATING </div>	<div style="border: 1px solid black; padding: 2px;"> <table style="width:100%; border-collapse: collapse;"> <tr> <td style="width:30%;">Process Fluid: XXXXXXXXXXXXXXXX</td> <td style="width:30%;">Specific Gravity: XXX</td> <td style="width:40%;"></td> </tr> <tr> <td>Barrier Fluid: XXXXXXXXXXXXXXXX</td> <td>Suction Pressure</td> <td></td> </tr> <tr> <td>Temperature: XXXXXXXXXXXXXXXX</td> <td>Discharge Pressure</td> <td></td> </tr> <tr> <td>Concentration: XXXXXXXXXXXXXXXX</td> <td>% of Solids Dissolved: X</td> <td></td> </tr> <tr> <td>Box Pressure: XXXXXXXXXXXX</td> <td>% of Solids Undissolved: XXXXXXXX</td> <td></td> </tr> <tr> <td>Seal Size: XXXXXXXXXXXX</td> <td></td> <td>XXXXXXX</td> </tr> <tr> <td>Shaft Speed: XXXXXXXXXXXXXXXX</td> <td></td> <td></td> </tr> <tr> <td>Viscosity: XXXXXXXXXXXXXXXX</td> <td></td> <td></td> </tr> </table> </div>			Process Fluid: XXXXXXXXXXXXXXXX	Specific Gravity: XXX		Barrier Fluid: XXXXXXXXXXXXXXXX	Suction Pressure		Temperature: XXXXXXXXXXXXXXXX	Discharge Pressure		Concentration: XXXXXXXXXXXXXXXX	% of Solids Dissolved: X		Box Pressure: XXXXXXXXXXXX	% of Solids Undissolved: XXXXXXXX		Seal Size: XXXXXXXXXXXX		XXXXXXX	Shaft Speed: XXXXXXXXXXXXXXXX			Viscosity: XXXXXXXXXXXXXXXX		
Process Fluid: XXXXXXXXXXXXXXXX	Specific Gravity: XXX																										
Barrier Fluid: XXXXXXXXXXXXXXXX	Suction Pressure																										
Temperature: XXXXXXXXXXXXXXXX	Discharge Pressure																										
Concentration: XXXXXXXXXXXXXXXX	% of Solids Dissolved: X																										
Box Pressure: XXXXXXXXXXXX	% of Solids Undissolved: XXXXXXXX																										
Seal Size: XXXXXXXXXXXX		XXXXXXX																									
Shaft Speed: XXXXXXXXXXXXXXXX																											
Viscosity: XXXXXXXXXXXXXXXX																											
<div style="border: 1px solid black; padding: 2px; transform: rotate(-90deg); transform-origin: center;"> SEAL INFO. </div>	<div style="border: 1px solid black; padding: 2px;"> Seal Style: XXXXXXXXXXXXXXXX  Gland Features: XXXXXXXX  Part Code: XXXXXXXX </div>		<div style="border: 1px solid black; padding: 2px; transform: rotate(-90deg); transform-origin: center;"> CLEARANCE </div>																								
<div style="border: 1px solid black; padding: 2px; transform: rotate(-90deg); transform-origin: center;"> SEAL CONST. </div>	<div style="border: 1px solid black; padding: 2px;"> <table style="width:100%; border-collapse: collapse;"> <tr> <td style="width:30%;">Gland Sleeve: XXXXXXXX</td> <td style="width:30%;"></td> <td style="width:40%;"></td> </tr> <tr> <td><u>Inboard:</u> XXXXXXXX</td> <td><u>Outboard:</u></td> <td></td> </tr> <tr> <td>Rotary Face: XXXXXXXXXXXX</td> <td>Rotary Face: XXX</td> <td></td> </tr> <tr> <td>Stationary Face: XXXXXXXX</td> <td>Stationary Face: XXXX</td> <td></td> </tr> <tr> <td>Elastomers: XXXXX</td> <td>Elastomers: XXX</td> <td></td> </tr> </table> </div>		Gland Sleeve: XXXXXXXX			<u>Inboard:</u> XXXXXXXX	<u>Outboard:</u>		Rotary Face: XXXXXXXXXXXX	Rotary Face: XXX		Stationary Face: XXXXXXXX	Stationary Face: XXXX		Elastomers: XXXXX	Elastomers: XXX		<div style="border: 1px solid black; padding: 2px; transform: rotate(-90deg); transform-origin: center;"> CLEARANCE </div>									
Gland Sleeve: XXXXXXXX																											
<u>Inboard:</u> XXXXXXXX	<u>Outboard:</u>																										
Rotary Face: XXXXXXXXXXXX	Rotary Face: XXX																										
Stationary Face: XXXXXXXX	Stationary Face: XXXX																										
Elastomers: XXXXX	Elastomers: XXX																										

APPARATUS AND METHOD FOR SELECTING  
A MECHANICAL SEAL; C. C. Bjornson, et al.;  
Northeast Equipment, Inc.

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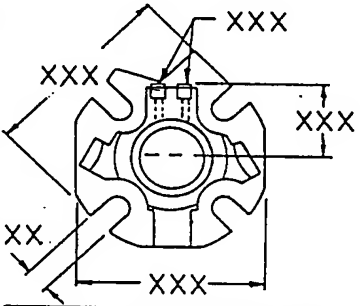
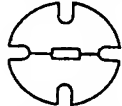
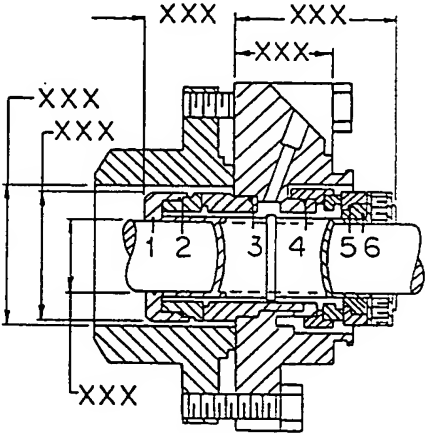
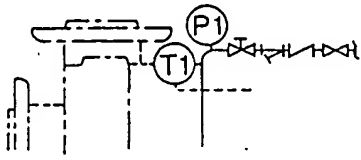
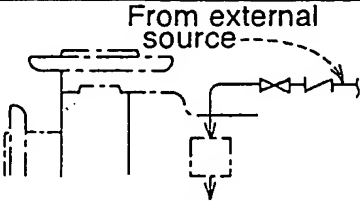
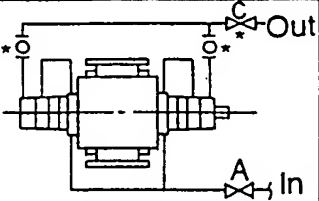
SEAL DIMENSIONAL INFORMATION		<b>Slot ID Detail</b> 														
	<table border="1" style="margin: auto;"> <tr> <th colspan="3">Seal Bolting Information</th> </tr> <tr> <td>Min. Bolt</td> <td>3/8</td> <td></td> </tr> <tr> <td>Circle</td> <td>1/2</td> <td></td> </tr> <tr> <td>By Stud</td> <td>5/8</td> <td></td> </tr> <tr> <td>Size</td> <td>3/4</td> <td></td> </tr> </table>	Seal Bolting Information			Min. Bolt	3/8		Circle	1/2		By Stud	5/8		Size	3/4	
Seal Bolting Information																
Min. Bolt	3/8															
Circle	1/2															
By Stud	5/8															
Size	3/4															
SPECIFICATIONS	<p>Please confirm that there are no obstructions which will interfere with the gland OD shown.</p>															
	<p>The Manufacturer suggests verification that your equipment will accomodate the seal shown above.</p>															

FIG. 30A(2)

**APPARATUS AND METHOD FOR SELECTING  
A MECHANICAL SEAL; C. C. Bjornson, et al.;  
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<b>ENVIRONMENTAL CONTROLS</b>	<div style="display: flex; justify-content: space-around; align-items: flex-start;"> <div style="text-align: center;">  <p><b>Plan 32</b> Injection to seal from external source of clean fluid into process fluid.</p> </div> <div style="text-align: center;">  <p><b>Plan 96</b> External fluid quench (steam only).</p> </div> <div style="text-align: center;">  <p><b>Plan E</b> Cooling to bearing housing and stuffing box jacket in series.</p> </div> </div>																																																																											
<b>PROCESS FLUIDS</b>	<p>Seal chamber pressure must be maintained at minimum 15psi (1bar) above process fluid vapor pressure at pumping temperature to prevent flashing.</p>																																																																											
<b>ADDITIONAL INFORMATION</b>	<p>Verification that the seal chamber will accommodate the throat bushing recommended should be done prior to ordering.</p>																																																																											
<b>ORDER INFORMATION</b>	<table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th style="width:10%;">Qty.</th><th style="width:20%;">Part Number</th><th style="width:30%;">Description</th><th style="width:15%;">List Price</th><th style="width:25%;">Price</th></tr> </thead> <tbody> <tr> <td align="center">X</td><td align="center">XXXXXXXXXX</td><td align="center">XXXXXXXXXXXXX XXXXXXXXXX</td><td align="center">XXXXXXX</td><td align="center">XXXXXXX</td></tr> <tr> <td></td><td align="center">XXXXXXX</td><td align="center">XXXXXXXXXXXXX</td><td></td><td align="center">XXXXXXX</td></tr> <tr><td> </td><td></td><td></td><td></td><td></td></tr> <tr><td> </td><td></td><td></td><td></td><td></td></tr> <tr><td> </td><td></td><td></td><td></td><td></td></tr> <tr><td> </td><td></td><td></td><td></td><td></td></tr> <tr> <td align="center">X</td><td align="center">XXXXXXXXXX</td><td align="center">XXXXXXXXXX</td><td align="center">XXXXXXX</td><td align="center">XXXXXXX</td></tr> <tr> <td align="center">X</td><td align="center">XXXXXXXXXX</td><td align="center">XXXXXXXXXX</td><td align="center">XXXXXXX</td><td align="center">XXXXXXX</td></tr> <tr><td> </td><td></td><td></td><td></td><td></td></tr> <tr><td> </td><td></td><td></td><td></td><td></td></tr> <tr><td> </td><td></td><td></td><td></td><td></td></tr> <tr><td> </td><td></td><td></td><td></td><td></td></tr> <tr> <td align="center" colspan="2">Quote #</td><td align="center">XXXXXXX</td><td align="center">XXXXXX</td><td align="center">QuoteTotal XXXXXX</td></tr> <tr> <td align="center" colspan="2">Delivery</td><td align="center">Discount</td><td align="center">XXX</td><td></td></tr> </tbody> </table> <div style="display: flex; align-items: center; margin-top: 10px;"> <div style="border: 1px solid black; padding: 2px; writing-mode: vertical-rl; transform: rotate(180deg); margin-right: 10px;">CHANGE</div> <div> XX  XX  XX </div> </div>	Qty.	Part Number	Description	List Price	Price	X	XXXXXXXXXX	XXXXXXXXXXXXX XXXXXXXXXX	XXXXXXX	XXXXXXX		XXXXXXX	XXXXXXXXXXXXX		XXXXXXX																					X	XXXXXXXXXX	XXXXXXXXXX	XXXXXXX	XXXXXXX	X	XXXXXXXXXX	XXXXXXXXXX	XXXXXXX	XXXXXXX																					Quote #		XXXXXXX	XXXXXX	QuoteTotal XXXXXX	Delivery		Discount	XXX	
Qty.	Part Number	Description	List Price	Price																																																																								
X	XXXXXXXXXX	XXXXXXXXXXXXX XXXXXXXXXX	XXXXXXX	XXXXXXX																																																																								
	XXXXXXX	XXXXXXXXXXXXX		XXXXXXX																																																																								
X	XXXXXXXXXX	XXXXXXXXXX	XXXXXXX	XXXXXXX																																																																								
X	XXXXXXXXXX	XXXXXXXXXX	XXXXXXX	XXXXXXX																																																																								
Quote #		XXXXXXX	XXXXXX	QuoteTotal XXXXXX																																																																								
Delivery		Discount	XXX																																																																									

**FIG. 30B**



**APPARATUS AND METHOD FOR SELECTING  
A MECHANICAL SEAL; C. C. Bjornson, et al.;  
Northeast Equipment, Inc.**

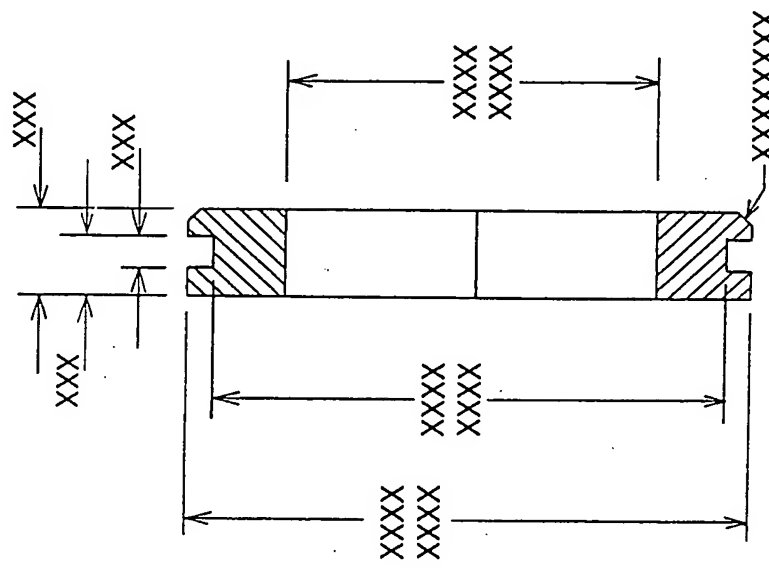
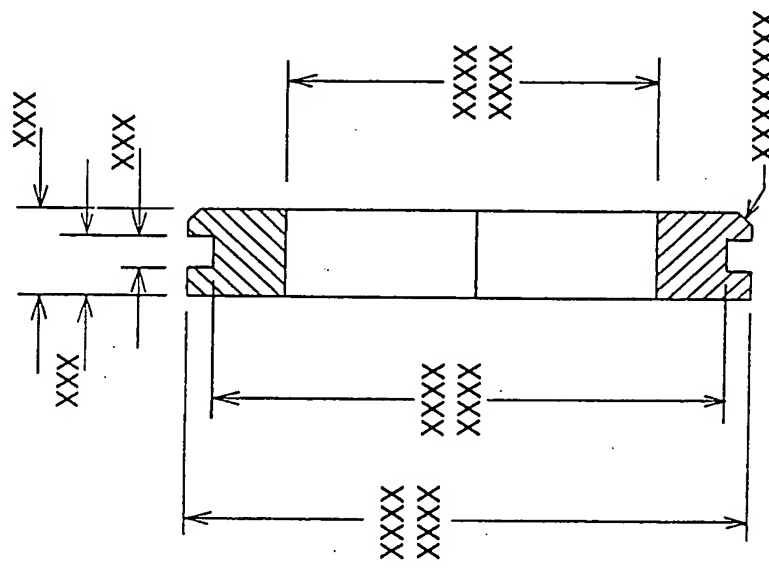
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<b>Manufacturers Special Bushing Print</b>		<b>39.0</b>																		
<div style="display: flex; justify-content: space-between;"> <div style="width: 30%;"> <p><b>For In House Use Only.</b></p> <p>The drawing shows a cross-section of a mechanical seal assembly. Dimensions are indicated with arrows and labeled 'XXX'. Key features include a central shaft, a seal ring, and various housing components. The drawing is oriented vertically on the page.</p> </div> <div style="width: 65%;"> <table border="1" style="width:100%; border-collapse: collapse;"> <tr> <td colspan="2" style="padding: 2px;">Special Part #:</td> </tr> <tr> <td style="padding: 2px;">Work Order #:</td> <td style="padding: 2px;">Date:</td> </tr> <tr> <td style="padding: 2px;">Checked By:</td> <td style="padding: 2px;">Date:</td> </tr> <tr> <td style="padding: 2px;">Approved By:</td> <td style="padding: 2px;">Date:</td> </tr> </table> <table border="1" style="width:100%; border-collapse: collapse;"> <tr> <td style="padding: 2px;">Clearances</td> </tr> <tr> <td style="padding: 2px;">Bushing ID .XXX</td> </tr> <tr> <td style="padding: 2px;">Bushing OD .XXX</td> </tr> </table> <table border="1" style="width:100%; border-collapse: collapse;"> <tr> <td style="padding: 2px;">Tolerances Except as noted</td> </tr> <tr> <td style="padding: 2px;">Decimal XXXXXXXXXX</td> </tr> <tr> <td style="padding: 2px;">Fractional XXXXXXXXXX</td> </tr> <tr> <td style="padding: 2px;">Angular XXXXXXXXXX</td> </tr> </table> <table border="1" style="width:100%; border-collapse: collapse;"> <tr> <td style="padding: 2px;">O-Ring Details</td> </tr> <tr> <td style="padding: 2px;">Size-XXX</td> </tr> <tr> <td style="padding: 2px;">Dimensional XXXXXXXXXXXXX</td> </tr> </table> </div> </div>			Special Part #:		Work Order #:	Date:	Checked By:	Date:	Approved By:	Date:	Clearances	Bushing ID .XXX	Bushing OD .XXX	Tolerances Except as noted	Decimal XXXXXXXXXX	Fractional XXXXXXXXXX	Angular XXXXXXXXXX	O-Ring Details	Size-XXX	Dimensional XXXXXXXXXXXXX
Special Part #:																				
Work Order #:	Date:																			
Checked By:	Date:																			
Approved By:	Date:																			
Clearances																				
Bushing ID .XXX																				
Bushing OD .XXX																				
Tolerances Except as noted																				
Decimal XXXXXXXXXX																				
Fractional XXXXXXXXXX																				
Angular XXXXXXXXXX																				
O-Ring Details																				
Size-XXX																				
Dimensional XXXXXXXXXXXXX																				
<table border="1" style="width:100%; border-collapse: collapse;"> <tr> <td style="width: 50%; padding: 2px;"> <b>Customer/Order Information</b>                  Quote #                  Date                  Customer Information                  PO #: _____             </td> <td style="width: 50%; padding: 2px;"> <b>Pump Information</b>                  Pump ID #: XXX                  Pump Mfg: XXXXX                  Model: XXXXXXXXXXXXX                  Bore Type: XXXXXXXXX                  Frame/Group XXX             </td> </tr> </table>		<b>Customer/Order Information</b> Quote # Date Customer Information PO #: _____	<b>Pump Information</b> Pump ID #: XXX Pump Mfg: XXXXX Model: XXXXXXXXXXXXX Bore Type: XXXXXXXXX Frame/Group XXX	<table border="1" style="width:100%; border-collapse: collapse;"> <tr> <td style="padding: 2px;"> <b>Bushing Information</b>                  Part Number: XXXXXXXXXXXXX             </td> </tr> </table>	<b>Bushing Information</b> Part Number: XXXXXXXXXXXXX															
<b>Customer/Order Information</b> Quote # Date Customer Information PO #: _____	<b>Pump Information</b> Pump ID #: XXX Pump Mfg: XXXXX Model: XXXXXXXXXXXXX Bore Type: XXXXXXXXX Frame/Group XXX																			
<b>Bushing Information</b> Part Number: XXXXXXXXXXXXX																				

**FIG. 31**

**APPARATUS AND METHOD FOR SELECTING  
A MECHANICAL SEAL; C. C. Bjornson, et al.;  
Northeast Equipment, Inc.**

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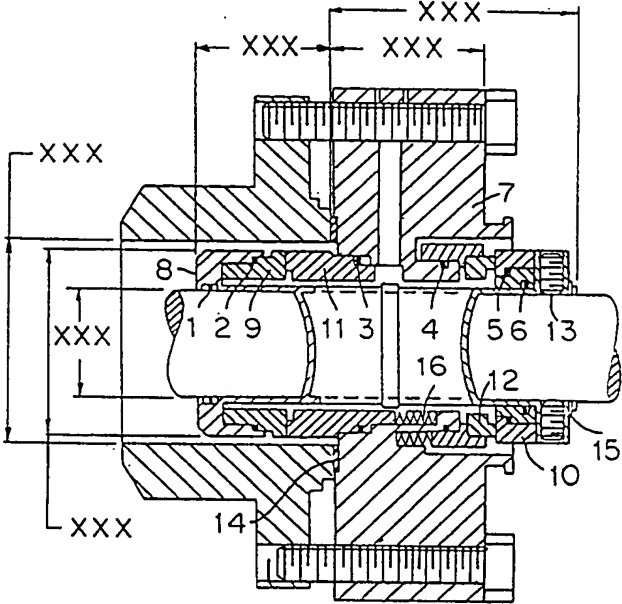
<b>Manufacturers Special Bushing Print For Vendors</b>		<b>39.0</b>				
<div style="display: flex; justify-content: space-between;"> <div style="width: 45%;"> <div style="display: flex; justify-content: space-between; border-bottom: 1px solid black; margin-bottom: 5px;"> <span>Special Part #:</span> </div> <div style="display: flex; justify-content: space-between; border-bottom: 1px solid black; margin-bottom: 5px;"> <span>Work Order #:</span> </div> <div style="display: flex; justify-content: space-between; border-bottom: 1px solid black; margin-bottom: 5px;"> <span>Checked By:</span> <span>Date:</span> </div> <div style="display: flex; justify-content: space-between; border-bottom: 1px solid black;"> <span>Approved By:</span> <span>Date:</span> </div> </div> <div style="width: 50%; text-align: center; padding-top: 20px;">  </div> <div style="width: 45%; border: 1px solid black; padding: 5px; margin-top: 10px;"> <table style="width:100%; border-collapse: collapse;"> <tr> <td style="padding: 2px;">Tolerances Except as noted</td> </tr> <tr> <td style="padding: 2px;">Decimal 3 Plcs. XXXX</td> </tr> <tr> <td style="padding: 2px;">Fractional XXXXX</td> </tr> <tr> <td style="padding: 2px;">Angular XXXXXX</td> </tr> </table> </div> </div>		Tolerances Except as noted	Decimal 3 Plcs. XXXX	Fractional XXXXX	Angular XXXXXX	
Tolerances Except as noted						
Decimal 3 Plcs. XXXX						
Fractional XXXXX						
Angular XXXXXX						
<div style="display: flex; justify-content: space-between;"> <div style="width: 45%;"> <p><b>For In House Use Only.</b></p> <p><b>Bushing Information</b></p> <p>Part Number: XXXXXXXXX</p> <p>Quote #</p> </div> <div style="width: 50%; text-align: center; padding-top: 20px;">  </div> </div>						
		XXXXXXXXXXXXX XXXXXXXXXXXXX XXXXXXXXXXXXX				

**FIG. 32**

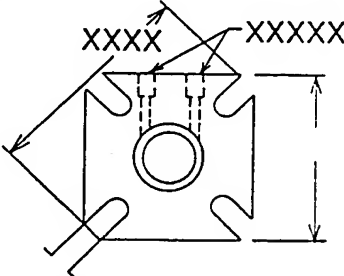
**APPARATUS AND METHOD FOR SELECTING  
A MECHANICAL SEAL; C. C. Bjornson, et al.;  
Northeast Equipment, Inc.**

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Materials Construction			
Item	Description	Material	Part #
1	XXXXXXXXXX	XXXXXX	XXXX
2	XXXXXXXXXX	XXXXXX	XXXX
3	XXXXXXXXXX	XXXXXX	XXXX
4	XXXXXXXXXX	XXXX	XXXX
5	XXXXXXXXXX	XXXXXX	XXXX
6	XXXXXXXXXX	XXXXXX	XXXX
7	XXXXXX	XXXXXX	XXX
8	XXXXXX	XXXX	XXXX
9	XXXXXX	XXXXXX	XXXX
10	XXXXXX	XXXXXX	XXXX
11	XXXXXX	XXXXXX	XXXX
12	XXXXXX	XXX	XXXX
13	XXXXXXXXXX	XXXX	XXXX
14	XXXXXXXXXX	XXX	XXXX
15	XXXXXX	XXXXXX	XXXX
16	XXXXXXXXXX	XXXXXX	XXXX
17	XXXXXX	XXXXXX	XXXX
18			
19			
20			



Bolting Information	
Bolts #	X
Bolting Size	XXX
Bolt Spacing	XX
Bolt Circles	

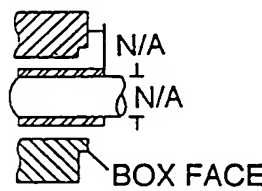
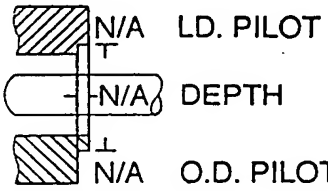
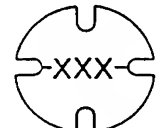
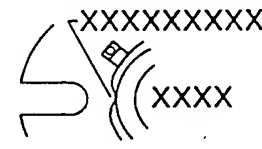


Equipment Modification/Notes/ Equipment Verifications	Customer Information
XXXXXXXXXXXXXXXXXXXX	
	XXXXXX XXX
	Operating Conditions
XXXXXXXXXXXXXXXXXXXX	XXXXXXXX XXXXXXXX XXXXXXXX
Additional Notes	XXXXXXXX XXXXXXXX XXXXXXXX
XXXXXXXXXXXXXXXXXXXX	XXXXXXXX XXXXXXXX XXXXXXXX
XXXXXXXXXXXXXXXXXXXX	Chemical Notes
	XXXXXXXX
XXXXXXXXXXXXXXXXXXXX	
	Environmental Controls
	XXXXXXXXXXXXXXXXXXXX

**FIG. 33A**

APPARATUS AND METHOD FOR SELECTING  
A MECHANICAL SEAL; C. C. Bjornson, et al.;  
Northeast Equipment, Inc.

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<b>Shaft or Sleeve Extension Detail</b> 		
<b>Pilot Detail</b> 		
<b>Slot ID Detail</b> 	<b>Modified Shroud Detail</b> 	
<b>Seal Information</b>	<b>Quote #</b>	<b>Ref #</b>
XXXXXXXXXX	XXXXXXXXXX	XXXXXX
XXXXXXX	XXXXXXX	
<b>Equipment Information</b>		
XXXXXXXXXXXXXXXXXXXXXX		
XXXXXXXXXXXXXXXXXXXXXX		
XXXXXXXXXXXXXX		
XXXXXXXXXXXXXXXXXXXXXX		
XXXXXXXXXXXXXX		
		XXXXXX
		XXXXXXXXXX

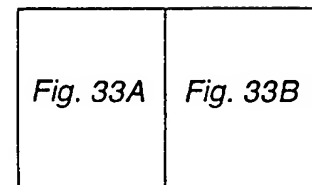


Fig. 33

FIG. 33B

**APPARATUS AND METHOD FOR SELECTING  
A MECHANICAL SEAL; C. C. Bjornson, et al.;  
Northeast Equipment, Inc.**

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Quote #	Prepared On	Valid Until:																																		
Bill To:	Ship To:																																			
<p>When placing an order, always reference <u>Quote #</u>, <u>Ref. #</u>, and specify <u>Quantity</u>, and <u>all Part Numbers</u> on purchase orders.</p>																																				
Mechanical Seal	<table border="1" style="width:100%; border-collapse: collapse;"> <tr> <th style="width:15%;">PO Number</th> <th style="width:15%;">Ship Via</th> <th colspan="2"></th> </tr> </table>				PO Number	Ship Via																														
	PO Number	Ship Via																																		
<table border="1" style="width:100%; border-collapse: collapse;"> <tr> <th style="width:10%;">Qty.</th> <th style="width:20%;">Part Number</th> <th style="width:50%;">Description</th> <th style="width:10%;">Price</th> </tr> <tr> <td align="center">X</td> <td align="center">XXXXXXXXXX</td> <td align="center">XXXXXXXXXXXXXXXXXXXX XXXXXX</td> <td align="center">XXXXXX</td> </tr> </table>				Qty.	Part Number	Description	Price	X	XXXXXXXXXX	XXXXXXXXXXXXXXXXXXXX XXXXXX	XXXXXX																									
Qty.	Part Number	Description	Price																																	
X	XXXXXXXXXX	XXXXXXXXXXXXXXXXXXXX XXXXXX	XXXXXX																																	
Optional Features Included In Each Seal	<table border="1" style="width:100%; border-collapse: collapse;"> <tr> <td style="width:10%;"></td> <td style="width:20%;">XXXXXXXXXX</td> <td style="width:50%;">XXXXXXXXXXXX</td> <td style="width:10%;">XXXXXX</td> </tr> <tr> <td></td> <td>XXXXXXXXXX</td> <td>XXXXXXXXXXXX</td> <td>XXXXXX</td> </tr> <tr><td></td><td></td><td></td><td></td></tr> <tr><td></td><td></td><td></td><td></td></tr> <tr><td></td><td></td><td></td><td></td></tr> </table>					XXXXXXXXXX	XXXXXXXXXXXX	XXXXXX		XXXXXXXXXX	XXXXXXXXXXXX	XXXXXX																								
		XXXXXXXXXX	XXXXXXXXXXXX	XXXXXX																																
		XXXXXXXXXX	XXXXXXXXXXXX	XXXXXX																																
Additional Products	<table border="1" style="width:100%; border-collapse: collapse;"> <tr><td></td><td></td><td></td><td></td></tr> <tr><td></td><td></td><td></td><td></td></tr> <tr><td></td><td></td><td></td><td></td></tr> <tr><td></td><td></td><td></td><td></td></tr> <tr><td></td><td></td><td></td><td></td></tr> <tr><td></td><td></td><td></td><td></td></tr> <tr><td></td><td></td><td></td><td></td></tr> <tr><td></td><td></td><td></td><td></td></tr> </table>																																			
<table border="1" style="width:100%; border-collapse: collapse;"> <tr> <td style="width:33%;">Ref 161</td> <td style="width:33%;">Delivery</td> <td style="width:33%;">Quote Total</td> <td style="width:33%;">XXXXXX</td> </tr> </table>				Ref 161	Delivery	Quote Total	XXXXXX																													
Ref 161	Delivery	Quote Total	XXXXXX																																	

Details shown for mechanical seal are for customer's use and are not required when ordering seal.

Gland Features:	XXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXX
Gland/Sleeve:	XXXXXXXXXX
Inboard Rotary Face:	XXXXXX    XXX    XX
Inboard Stationary Face:	XXXXXX    XXX    XX
Inboard Elastomers:	XXXXXX    XXX    XX

Distributor

Your Company Name Here

Your Address

Your City, State

Your Phone (Phone)

Your Fax (Fax)

Manufacturer

Your Zip

XXXXXXXXXXXXXXXXXXXX

**FIG. 34**

**APPARATUS AND METHOD FOR SELECTING  
A MECHANICAL SEAL; C. C. Bjornson, et al.;  
Northeast Equipment, Inc.**

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<b>Q U O T E</b>	Quote # Quote Date Gland Type XXXX Sleeve Type XXXX Part Code XXXXX XXXX
----------------------------------	---

<b>E Q U I P M E N T</b>	PumpID XXXX Manufacturer XXXXXXXXXXXX Model XXXXX BoreType XXXXXXXXXXXX SleeveType XXXXXXXXXXXX Pump Sizes Frame Group XXXXXX
--	---

Equipment Drawing	

Design Approved By:				
---------------------	--	--	--	--

<b>D I M E N S I O N</b>	Ds Seal Size	D1 Sleeve OD	D2 Box Bore	
			Min	Max
	XXX	XXXX	XXXXX	
Analysis		?	?	?

<b>E Q U I P M E N T S</b>	?	A Seal Size		N ID Pilot	F Pilot Depth	E OD Pilot	C Bore
		XXX		XX	XXX	XXX	XXX
XXXXXXX XXXXXXX			Verify		Verify		

Fig. 35A

Fig. 35B

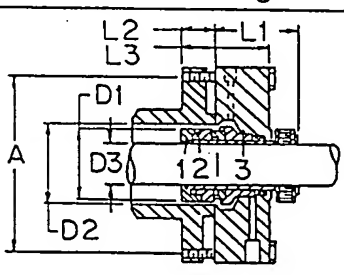
Fig. 35C

Fig. 35

**FIG. 35A**

**APPARATUS AND METHOD FOR SELECTING  
A MECHANICAL SEAL; C. C. Bjornson, et al.;  
Northeast Equipment, Inc.**

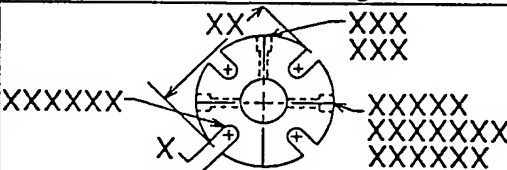
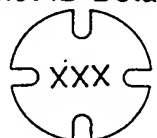
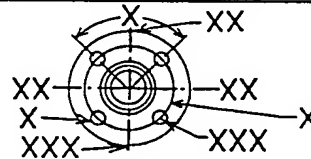
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<b>CUSTOMER</b>	<div style="display: flex; justify-content: space-between; align-items: center;"> <span>(Phone)</span> <span>(Fax)</span> </div>													
<b>OPERATING CONDITIONS</b>	Process Fluid		XXXXXXXXXX											
	Temperature	X	XXXX	Discharge Pressure	psig									
	Specific Gravity	XXXXXXXXXX		Shaft Speed	RPM									
	Viscosity	XXXX	XXXX	% of Solids										
	Concentration	XXXXXXXXXX		Dissolved										
	Box Pressure	XXXXXXXXXX		Undissolved Fibrous										
	Suction Pressure	XXXXXXXXXX		Undissolved Non-Fibrous										
Seal Drawing														
														
<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%; text-align: center; padding: 10px;">D3 Gland OD</td> <td style="width: 50%; text-align: center; padding: 10px;">L1 Outside Length</td> </tr> <tr> <td colspan="2" style="height: 20px;"></td> </tr> <tr> <td colspan="2" style="text-align: center; padding: 10px;">XXXX</td> </tr> <tr> <td colspan="2" style="text-align: center; padding: 10px;">(?)</td> </tr> </table>						D3 Gland OD	L1 Outside Length			XXXX		(?)		
D3 Gland OD	L1 Outside Length													
XXXX														
(?)														
<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 33%; text-align: center; padding: 10px;">E.O.D. Gland OD Existing</td> <td style="width: 33%; text-align: center; padding: 10px;">M.O.D. Gland OD Max.</td> <td style="width: 33%; text-align: center; padding: 10px;">  First Obstruct</td> </tr> <tr> <td colspan="2" style="height: 20px;"></td> <td style="text-align: center; padding: 10px;">XXXX</td> </tr> <tr> <td colspan="2" style="text-align: center; padding: 10px;">Verify</td> <td style="text-align: center; padding: 10px;">Verify</td> </tr> </table>						E.O.D. Gland OD Existing	M.O.D. Gland OD Max.	 First Obstruct			XXXX	Verify		Verify
E.O.D. Gland OD Existing	M.O.D. Gland OD Max.	 First Obstruct												
		XXXX												
Verify		Verify												

**FIG. 35B**

**APPARATUS AND METHOD FOR SELECTING  
A MECHANICAL SEAL; C. C. Bjornson, et al.;  
Northeast Equipment, Inc.**

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		<b>PERSONAL INFORMATION</b>		Your Company Name Here Your Address Your City, State                      Your Zip Your Phone                              (Phone) Your Fax                                  (Fax)					
		<b>EQUIPMENT INFORMATION</b>		XX XX <div style="border: 1px solid black; height: 20px; width: 100%; margin: 5px 0;"></div> XX					
<b>Special Details</b>				<b>Seal Drawing</b>					
Slot ID Detail									
									
						<b>Equipment Drawing</b>			
									
		L2 Inside Length	L3 Gland Length	<b>BOLTING</b>					
				A Min. Bolt Circle By Stud Size				S Slot Width	
				XX	XXX	XX	XX		
		XX	XXX					XXX	
?		?	?	?					
G Sleeve Extend From Face	B Sleeve Steps To Shaft Size	D Depth		U Bolts#	S Bolt Spacing	Q Bolting Size	R Bolt Circles	W Horz. Dist.	Z Vert. Dist.
XX	XX	XXXX		XX	XX	XX	XX		
Verify		Verify		Verify					

**FIG. 35C**



APPARATUS AND METHOD FOR SELECTING  
A MECHANICAL SEAL; C. C. Bjornson, et al.;  
Northeast Equipment, Inc.

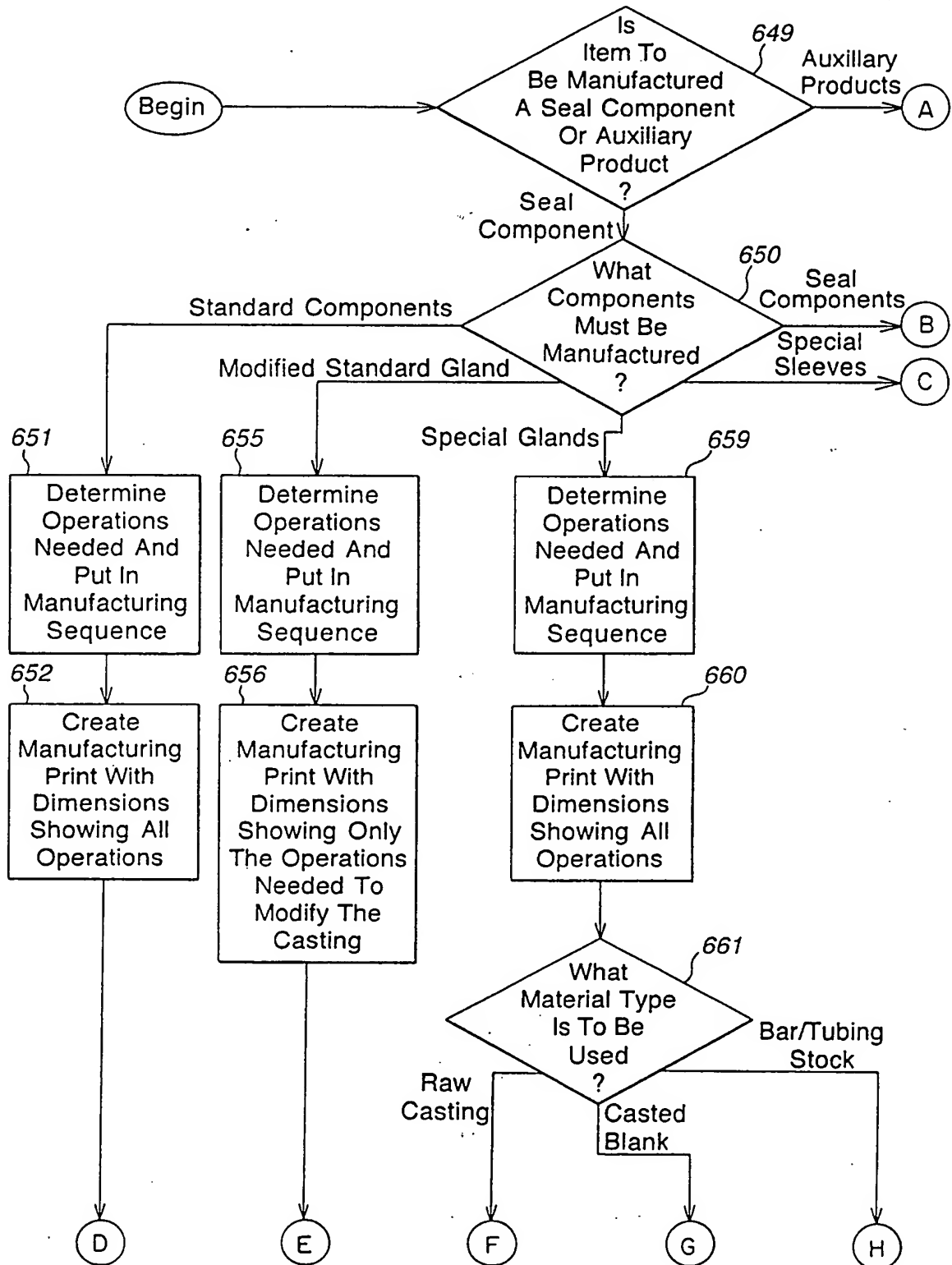
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Sort by Quote Number		Sort by Seal Part #		Sort by Equipment Tag		Sort by Pump Mfg/Model		Print All Bill of Materials		Print All Quote Proposals		Select New Customer	
Customer	QuoteID	Equipment Tag	PumpMfg	Model	FrameGroup	Pump Size	BoreType	Shaft Speed	Seal Model #	Seal Size	Part Code	Add'l Features	
<input type="checkbox"/>	XXXX		XXXXXX	XXXXXX	X	XXXXX	XXXXXX	XXXX	XXXX	XXXX	XXXXXX	XXXXXX	
	XXX											XXXXXXXXXX	
<input type="checkbox"/>	XXXX		XXXXX	XXXX		XXXXX	XXXXXX	XXXX	XXXX	XXXX	XXXXXX	XXXXXX	
	XXX			XX			XXXXXX						
<input type="checkbox"/>	XXXX		XXXXX			XXXXX		XXXX		XXXX	XXXXXX	XXXXXX	
	X												
<input type="checkbox"/>	XXXX		XXXXX	XXXX		XXXXX	XXXXXX	XXXX	XXXX	XXXX	XXXXXX	XXXXXX	
	XXX			XXX								XXXXXX	
<input type="checkbox"/>	XXXX		XXXXX	XXXX		XXXXX	XXXXXX	XXXX	XXXX	XXX	XXXXXX	XXXXXX	
	XXX			X								XXXXXX	
<input type="checkbox"/>	XXXX		XXXXX	XXXX		XXXX	XXXXXX	XXXX	XXXX	XXX	XXXXXX	XXXXXX	
	XXX			XX								XXXXXX	
<input type="checkbox"/>	XXXX		XXXXX	XXX		XXXXX		XXXX	XXXX	XXXX	XXXXXX	XXXXXX	
	XXX											XXXXXX	
<input type="checkbox"/>	XXXX		XXXXX	XXX		XXXXX		XXXX	XXXX	XXXX	XXXXXX	XXXXXX	
	XXX											XXXXXX	
<input type="checkbox"/>	XXXX		XXXXX	XXXX		XXXXX	XXXXXX	XXXX	XXXX	XXX	XXXXXX	XXXXXX	
	XXX			XX								XXXXXX	

FIG. 36

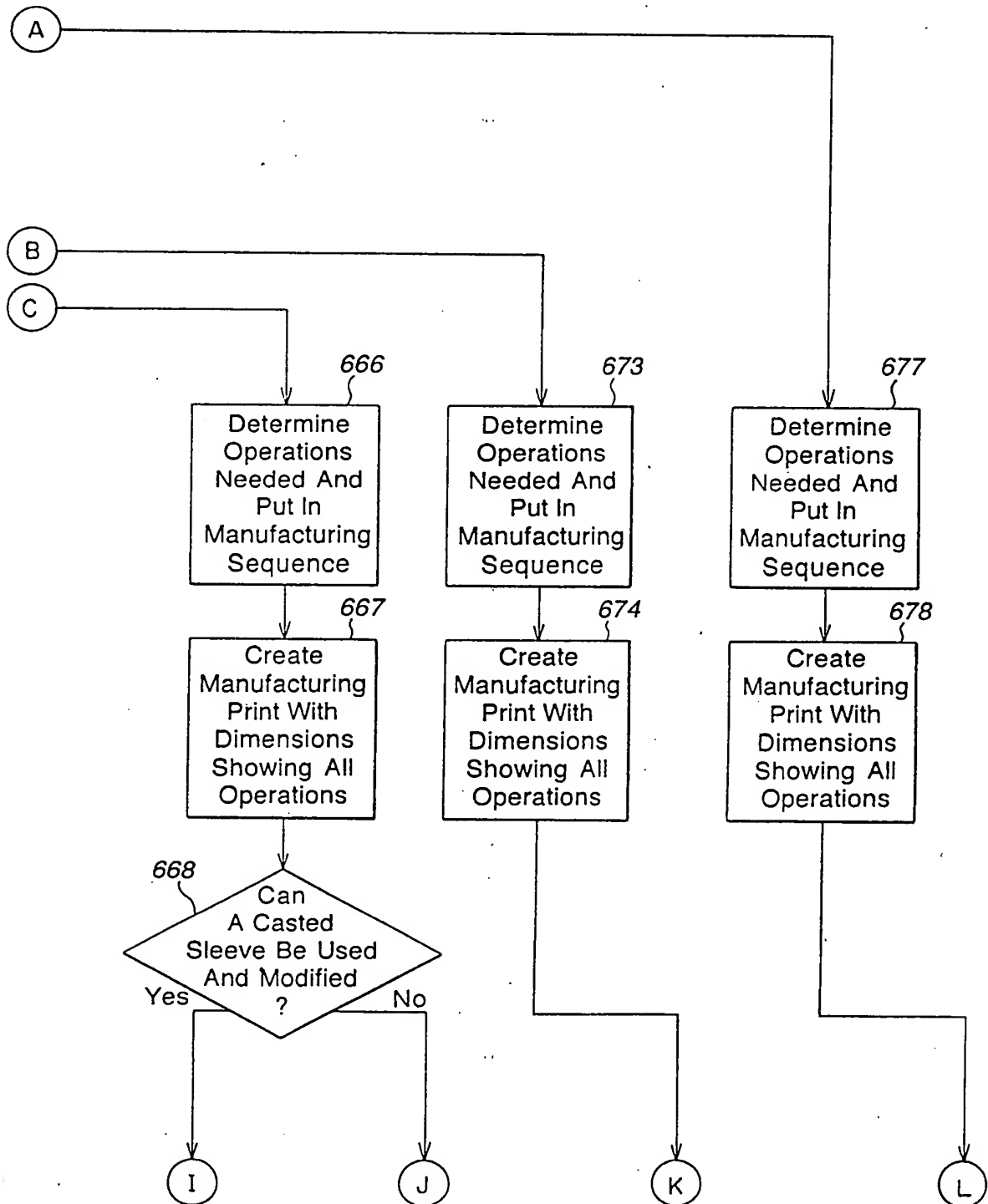
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FIG. 37A

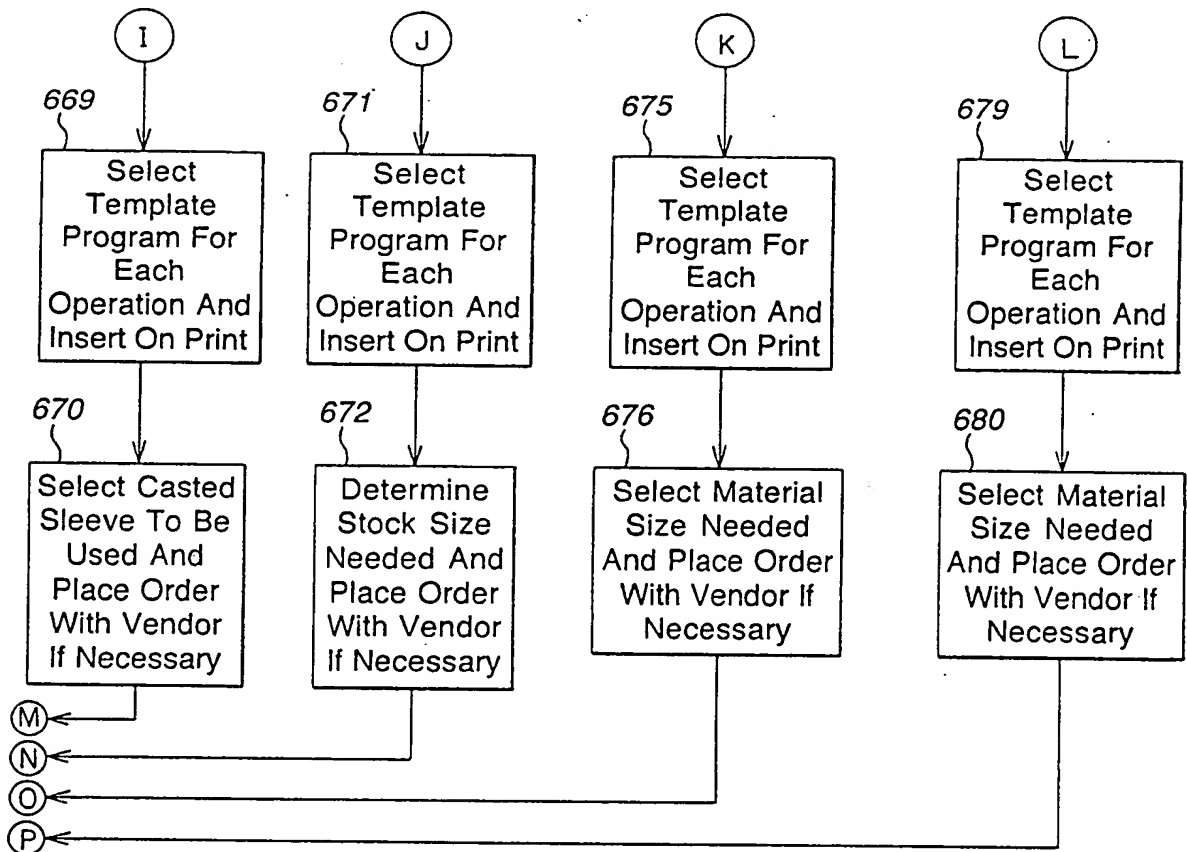


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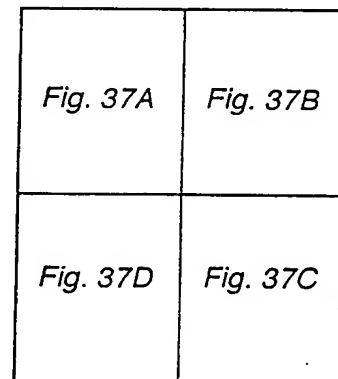
FIG. 37B



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**FIG. 37C**



**Fig. 37**

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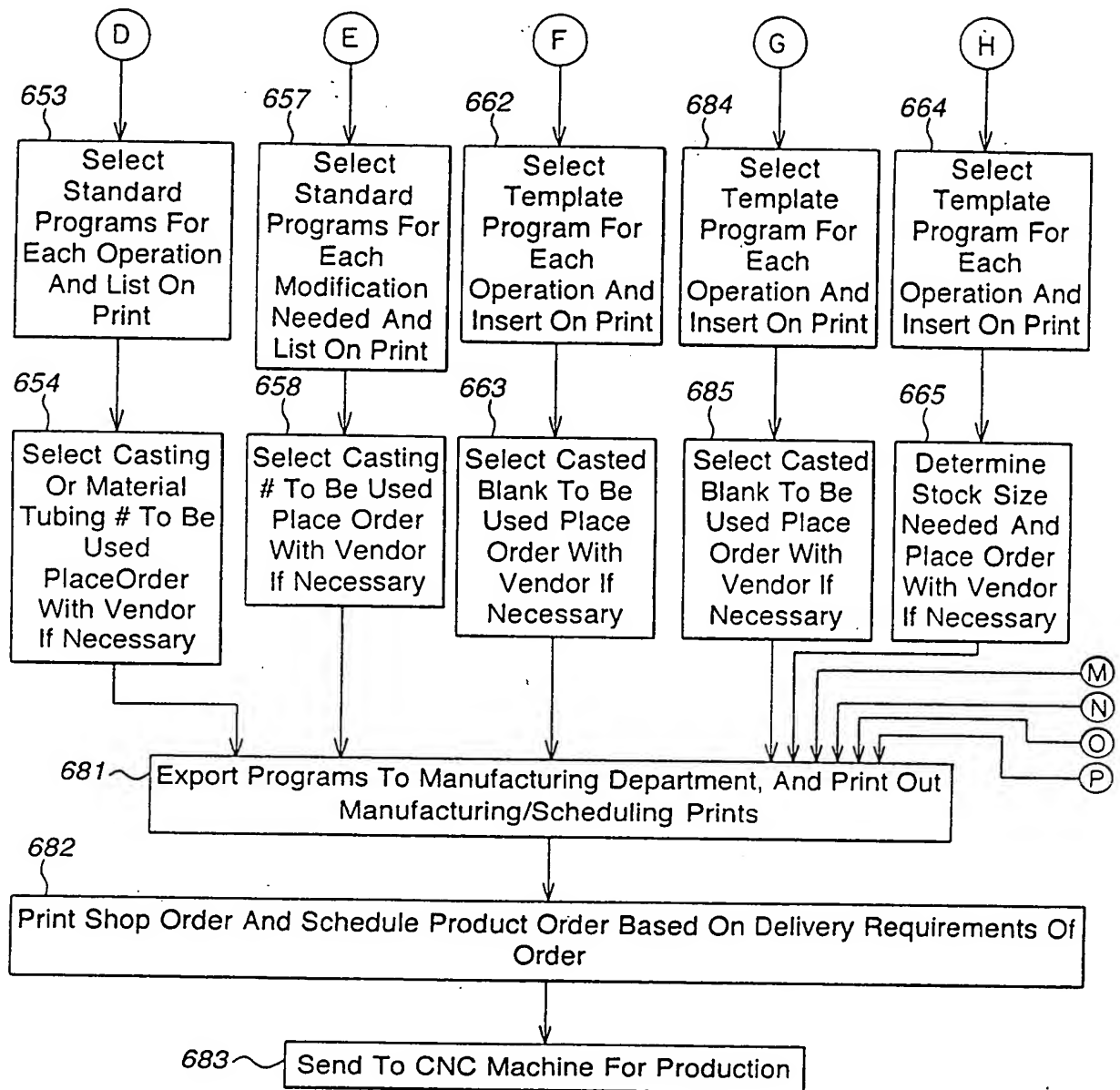


FIG. 37D